OLDER ADULTS' THIRD PLACES AND PERCEIVED SOCIAL CONNECTEDNESS

A Dissertation

by

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ABSTRACT

The rapid growth of the older adult population and the preference for aging in place is a global phenomenon that will necessitate a reshaping of communities to reflect the older population's perception and behavior. Social relationship and support in later life is important for older adults' quality of life and health. This study aimed to identify what places American older adults frequently use for socializing and what specific characteristics of places contribute to their visit. It also examined the impact of third places on older adults' perceived social connectedness. In this study, places that people go for socializing on regular basis outside their home were defined as third places.

The study area consisted of two cities, Bryan and College Station in Texas. The subjects were older adult homeowners who live in their own single-family homes. The randomly selected 1,150 households were visited door-to-door in Spring 2014. In total, 320 older adults participated in the study. For survey, the Pick-up and Drop-off method was used. 10% of the previous participants were revisited to check for test-retest reliability.

Controlling other variables, having a third place significantly influenced older adults' perceived social connectedness. For older adults having a third place, the number of third places and trip frequency did not make any difference in the level of perceived social connectedness.

Third places most frequently visited by older adults were churches, restaurants/cafes, and gym/exercise places. Friendly people, atmosphere, and activities

were the major contributing factors for older adults' visits to third places. The findings of this study suggests that allowing a densely clustered, walkable places of small-scale commercial uses, especially food services, retails, and recreational facilities, in residential areas would help older adults to be more socially connected and physically independent as they age in place.

DEDICATION

This dissertation is dedicated

to my parents, grandmother, and my Lord Jesus Christ

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CHAPTER I

INTRODUCTION

1.1. Background of the Study

The growth of the older adult population will be the most salient demographic shift over the next few decades that will challenge and reshape American societies and communities. As baby boomers born between 1946 and 1964 entered the age group of 65 and over in 2011, it was projected that the older adult population in 2030 will be twice as large as their counterparts in 2000, representing nearly 20% of the total U.S. population. Moreover, the proportion of people age 65 and older is expected to stabilize at around 20% in 2030 (Federal Interagency Forum on Aging-Related Statistics, 2012).

People who are reaching this age group prefer to age in place as opposed to relocating to senior towns, if a community meets several criteria. They include low cost of living, good health-care facilities, easy access to cultural, educational, and recreational opportunities, low crime rate, and stable local economy (Bookman, 2008; Hu, Wei, Schlais, & Yeh, 2008; Lubow, 1999).

Social connectedness influences the quality of life and health in later life. Lack of social connectedness, i.e. social isolation, is a major risk factor for older adults' health (House, Landis, & Umberson, 1988). A number of studies have shown that social isolation is correlated with mental illness, distress, dementia, suicide, and premature death (Berkman & Syme, 1979; Ellis & Hickie, 2001; Fratiglioni, Wang, Ericsson, Maytan, & Winblad, 2000; House, Robbins, & Metzner, 1982; Kawachi et al., 1996;

Lester & Yang, 1992; Turner, 1981). Elderly individuals with strong social connections have lower levels of mortality (Engedal, 1996; Sabin, 1993; Steinbach, 1992), and reduced suicide rates (Durkheim, 1951; Lester & Yang, 1992).

A growing body of literature examined whether there is a relationship between urban environment and social relationships (Lund, 2002; KM Layden, 2003; Lund, 2003; Du Toit et al., 2007; L Wood et al, 2008; L Wood et al., 2010; Hanibuchi et al, 2011; Rogers et al., 2011; Wilkerson et al., 2012). These studies focused on neighborhood environment correlates of walking such as neighborhood safety, the number of destinations within a walking distance, and mixed-land use. In addition, the subjects in most of these studies were mainly from the general population.

Informal meeting places, so called *third places* (Oldenburg & Brissett, 1982) have been recognized as a hub for the social vitality of a community. They are simply meeting places, i.e. places to socialize and hang out with friends or neighbors. According to the definition by the sociologist Oldenburg, the first place is a home; the second place is the workplace; and the third place is where people spend their leisure time outside their home (R Oldenburg, 1999). Since a majority of older adults are retirees, a third place technically becomes a second place to this age group since they no longer have a workplace. Then, third places become potentially even more influential. In this study, third places were operationalized as *places that an older adult visits at least once a week to socialize with others*. Places for socializing are understudied in terms of their impact on older adults' social connectedness. To create more age-friendly communities, it is

critical to understand what places older adults use for socializing, what attributes of places affect their visits, and how such places affect their social connectedness.

1.2. Research Aims

This research seeks to identify what places older adults use for socializing and what attributes (e.g. activities, location, atmosphere, and seating) of places contributes to their frequent visit. It also aims to investigate the impact of third places on perceived social connectedness.

Specific aims follow as:

Aim 1. To find what types of places older adults use for socializing on a regular basis, i.e. what third places they have.

Aim 2. To find contributing attributes of places to older adults' visits, i.e. important qualities of third places.

Aim 3. To examine the impact of a third place on older adults' perceived social connectedness.

Hypothesis 1: Older adults having a third place are more socially connected than those without a third place.

Hypothesis 2: Among those who have a third place, the more third places older adults have, the more they are socially connected.

Hypothesis 3: Among those who have a third place, the more often older adults visit third places, the more they are socially connected.

1.3. Significance

Previous studies on third places and older adults' social interactions were mostly conducted in a specific setting such as a coffee shop or fast-food restaurant (Cheang, 2002; Rosenbaum, Sweeney, and Windhorst, 2009; Troy, Glover, Diana, & Parry, 2009). There was no single study that showed a comprehensive list of older adults' third places at community or city level. In addition, most studies were conducted in non-U.S. territory. This study filled this gap by identifying third places of older adults living in single-family homes in two American cities. The following are the specific contexts of existing literature, which examined the relationship between third places and social interaction and included older adults to some degree in participants.

Secondly, this study used an integrated framework of social connectedness in order to investigate the impact of third place on social connectedness. Previous studies did not consider other factors such as health and self-efficacy that can affect social connectedness. This study thoroughly examined previous studies about correlated factors of older adults' social connectedness or isolation and controlled statistically significant correlates.

Third, in growing trend of seniors' returning to college towns (Lubow, 1999; Hu, Wei, Schlais &Yeh, 2008; Forbes, 2014), it is timely to explore their socializing behavior and pattern in terms of built environment and health. There was no single literature found on this issue in the context of college cities or towns. The study was conducted in two adjacent college cities: City of College Station and City of Bryan in Texas. A college town or city in the United States has become an emerging popular

retirement place for baby-boomers (Lubow, 1999; Hu, Wei, Schlais &Yeh, 2008; Forbes, 2014). College towns usually have several distinct characteristics such as relatively low cost of living, affordable range of housing prices, availability of hospitals and healthcare facilities, and good access to recreational and educational opportunities. These attributes of college towns are similar to the deciding factors in choosing a retirement location. Significant deciding factors that influence older adults' retirement migration are as follows (Hu, Wei, Schlais &Yeh, 2008): cost of living (Savageau, 1999; Hass & Serow, 1993), availability of quality housing and adequate hospitals and healthcare facilities, crime rate and community security (Hass and Serow, 1993), and recreational opportunities and cultural amenities (Hass & Serow, 1993; Savageau, 1999). Although warm climate is usually an important factor motivating retirees to move from the north to the south (Cuba & Longino, 1991; Longino, Perzynski, & Stoller, 2002), the climate attraction is not a deciding factor due to people's diversified preference of climate (Longino, Perzynski, & Stoller, 2002).

Another major contribution of this research lies in the inclusion of both third-place users and non-users. The impact of third place use on social connectedness cannot be fully understood if non-users are excluded in participants. Previous studies, except for one study conducted in several deprived neighborhoods of Britain (Paul Hickman, 2013), did not include people who do not have a third place. The subject of this study was total population of older adults (+65) living in their own single-family homes in two cities (N=5,895). The randomly selected 19.5% of the population (N=1,150) were visited door-to-door for a survey in Spring 2014. The response rate was 27.8%. Third place

users and non-users accounted for 45% and 55% of participants respectively.

A single-family home is a typical residential type of American households. A majority of older adults live in this environment even though some people relocate to nursing homes, assisted living, or senior communities. This era is marked by burgeoning preference for aging in place and active aging. Thus, it is essential to have a comprehensive understanding of older adults' socializing behavior and perception in the context of their current daily living environment. In this sense, the findings of this study will represent the current behavior and perception of older adults living in a typical American residential area.

Finally, in a dearth of literature on American older adults' use of third places, this study contributed to the understanding of a third place by identifying the types of third places, visit frequency, specific attributes of places contributing to older adults' visits such as atmosphere, activities, and people.

CHAPTER II

THEORY AND LITERATURE

2.1. Introduction

Older adults' social connectedness is influenced by many factors. In this section, the known factors will be explored. First, the risk factors for social isolation will be examined, which were mainly discussed in the fields of medicine and public health. The concept, social isolation or social connectedness, were rarely studied in regards to built environment. In planning discipline, there exist similar concepts such as social integration, sense of community, and neighboring. Social isolation or social connectedness represents the social condition of 'an individual'. On the other hand, community and social integration reflect the social condition of 'community' perceived by an individual. Despite the difference, this study will also review the literature on sense of community and social capital in relation to social interaction, in order to understand social connectedness in a large framework extended to a community level. Finally, previous studies on third places were explored, in particular older adults' use of third places. Studies that did not include older adults as participants were excluded in review.

2.2. Social Isolation and Loneliness in Older Adults

Social isolation is "a state in which an individual lacks a sense of belonging socially, lacks engagement with others, has a minimal number of social contacts, and are deficient in fulfilling and quality relationships" (Nicholson Jr, 2009, p.1346).

Social isolation is a major risk factor for mortality (House et al., 1988). It is correlated with mental illness, distress, dementia, suicide, and premature death (Berkman & Syme, 1979; Turner, 1981; House, Robbins, & Metzner, 1982; Kawachi et al., 1996; Lester & Yang, 1992; Fratiglioni, Wang, Ericsson, Maytan, & Winblad, 2000; Ellis & Hickie, 2001). Elderly individuals with strong social connections have a lower level of mortality (Sabin, 1993; Steinbach, 1992; Engedal, 1996), and reduced suicide rates (Lester & Yang, 1992; Durkheim, Spaulding, & Simpson, 2010).

Table 1 Risk Factors for Older Adults' Social Isolation

Risk factors	References	Study area & sample size
Older (increased age)	Kobayashi, Cloutier-Fisher, & Roth, 2009	British Columbia, Canada: N=1,064 older adults (65+)
	Luggen and Rini, 1995	N=62 older adults (65+) living in private houses and apartments, government housing, and assisted-living retirement centers: urban and suburban areas in and surrounding a large metropolitan Midwestern city, US: 65–72 = 27.4 % 72–78 = 30.6 % 78+ = 41.9 %
Non-married	Single, widowed, separated, or divorced (Kobayashi et al., 2009)	British Columbia, Canada: N=1,064 older adults (65+)
Female	Kobayashi et al., 2009	British Columbia, Canada: N=1,064 older adults (65+)
Living alone	Kobayashi et al., 2009	British Columbia, Canada: N=1,064 older adults (65+)
	LaVeist, Sellers, Brown, & Nickerson, 1997	US (data source: LSOA): N=726 African American elderly women (ages 55+)
	Haven, Hall, Sylvestre, & Jivan, 2004	Manitoba, Canada (data source: 1996 Aging in Manitoba): N=1,868 older adults (72+)
Significant life Event	Recent death of spouse & Death of relatives and friends/close neighbors (Wenger & Burholt, 2004)	Rural Wales, UK: N=47 older adults (65+) (mean age = 93): longitudinal study
Short length of residence in a province	Kobayashi et al., 2009	British Columbia, Canada: N=1,064 older adults (+65)
Poor health	Subjective poor health status (Kobayashi et al., 2009)	British Columbia, Canada: N=1,064 older adults (+65)
	Cognitive decline (Barnes, De Leon, Wilson, Bienias, & Evans, 2004)	Southern Chicago (data: the Chicago Health and Aging Project): N=6,102 older adults (+65): non-Hispanic African Americans (61.2%) and whites
	Cognitive decline (Bassuk, Glass, & Berkman, 1999)	New Haven, Conneticut: N=2,812 older adults (+65)

Table 1 Continued

Risk factors	References	Study area & sample size
	Cognitive decline for the rural sub-sample & Functional decline for urban sub-sample (Havens et al., 2004)	Manitoba, Canada (data source: 1996 Aging in Manitoba): N=1,868 older adults (+72)
	Cognitive function (Yeh & Liu, 2003)	Kaohsiung City, Southern Taiwan: 4,993 older adults (+65)
Low level of self-efficacy in social situations	Cohen-Mansfield & Parpura-Gill, 2007	N=61 residents of five independent-living buildings for low-income older adults in Maryland (mean=74.9)
Decreased driving status & low level of out-of-home social activity	Mooney, 2003	Nationally drawn sample Older Canadian male veterans (data source: Veterans' Care Needs Survey) N=1,799 non-institutionalized male veterans
No regular/frequent church attendance	Ellison & George, 1994	Five-county areas in North Carolina, US (one: urban & four: rural) (data source: ECA) N=2,956 adults (+18) Older adults (n=900, +60) were oversampled.
	Kobayashi et al., 2009	British Columbia, Canada: N=1,064 older adults (+65)
No homeownership	Kobayashi et al., 2009	British Columbia, Canada: N=1,064 older adults (+65)
Financial Difficulty	Howat et al., 2004	N=59 older adults (60+), n = 38 focus groups, = 13 interview, n = 8 in-depth interview
Fear of crime in the residential neighborhood	Thompson & Krause, 1998	US non-institutionalized, English speaking, retired adults between 65 and 99 years of age N=898 (71% Living with others, 92.8% White)

Table 1 shows the correlation with social isolation found in previous literature. Social isolation is correlated with being older (Kobayashi, Cloutier-Fisher, & Roth, 2009), living alone (LaVeist, Sellers, Brown, & Nickersn, 1997; Haven, Hall, Sylvestre, & Jivan, 2004; Kobayashi et al., 2009), being single/ widowed/ divorced (Kobayashi et al., 2009), being in poor health condition (Bassuk, Glass, & Berkman, 1999; Yeh & Liu, 2003; Havens, et al., 2004; Barnes, De Leon, Wilson, Bienias, & Evans, 2004; Kobayashi et al., 2009), no homeownership (Kobayashi et al., 2009), being female (Kobayashi et al., 2009), short length of residence in a province (Kobayashi et al., 2009), currently non-driving and low level of out-of-home social activity (Mooney, 2003), fear of crime in the residential neighborhood (Thompson & Krause, 1998, and no attendance of religious services (Ellison & George, 1994; Kobayashi et al., 2009).

The previous studies on risk factors for social isolation were predominantly conducted in Canada. There are only a few studies conducted in the United States, which identified a correlation of social isolation to living alone (LaVeist, Sellers, Brown, & Nickerson, 1997), cognitive decline (Barnes, De Leon, Wilson, Bienias, & Evans, 2004), frequent church attendance (Ellison & George, 1994), and fear of crime in a residential neighborhood (Thompson & Krause, 1998).

2.3. Neighborhood Environment and Social Connectedness

The relationship between neighborhood environment and social connectedness has been studied in several similar concepts such as social integration (Kweon, Sullivan, & Wiley, 1998), sense of community(Du Toit, Cerin, Leslie, & Owen, 2007; Kweon et

al., 1998; Wood, Frank, & Giles-Corti, 2010), social capital (Hanibuchi et al., 2012; Leyden, 2003; Rogers, Halstead, Gardner, & Carlson, 2011; Wood & Giles-Corti, 2008), and neighborliness (Lund, 2003; Wilkerson, Carlson, Yen, & Michael, 2012). According to a concept analysis of social isolation, social isolation is "a state in which an individual lacks a sense of belonging socially, lacks engagement with others, has a minimal number of social contacts, and are deficient in fulfilling and quality relationships" (Nicholson Jr, 2009, p.1346). On the other hand, social integration is "the extent to which people maintained close personal relationships with others (Berkman, 1995, p. 245)." Social capital "consists of those features of the social organization – such as networks of secondary associations, high levels of interpersonal trust, norms of mutual aid and reciprocity – which acts as resources for individuals and facilitate collective action" (Lochner, Kawachi, & Kennedy, 1999; Putnam, 1995). Sense of community is the feeling that members have of belonging and being important to each other and a shared faith that members' needs will be met by the commitment to be together (McMillan & Chavis, 1986).

All these concepts have similarity in a sense that they are measuring social interaction and social relationship. However, there exist distinct differences. Social isolation represents the social condition of 'an individual'. Social relationship of an individual is not only limited to a neighborhood or community. The extent of causes of social isolation can go beyond a community where the individual lives. On the other hand, community and social integration reflect the social condition of 'a community' perceived by an individual. In understanding social isolation or connectedness in a

context of neighborhood environment, it will be useful to review literatures on social integration, sense of community, and social capital.

Older adults' social interaction in the context of neighborhood has been studied since 1980s. In the early years, scholars focused on the impact of neighborhood safety and maintenance. They found a strong correlation of social interaction with factors such as crime rate (Coleman, 1985), noise (Carp, 1986), dilapidated living conditions (Dunham, 1939; Krause, 1993), and high-rise buildings (Lawton, Nahemow, & Teaff, 1975). Since New Urbanism movement has arisen in 1980s, there has been a growing awareness of neighborhood walkability. Hence, the focus of research on social interaction has been changed to neighborhood walkability (Wilkerson, Carlson, Yen, & Michael, 2012). The benefit of neighborhood walkability on social interaction is rooted in a rationale that attributes of neighborhood associated with more walking or pedestrian friendliness may encourage residents to spend more time walking in the neighborhood, and thus promote casual interaction and develop relationship among neighbors.

Although the relationship of neighborhood environment with social interaction has been studied for many years, there exist only two studies that targeted older adult population, one of which (Kweon, 1998) was conducted in an inner-city public housing predominantly populated with African Americans in the United States, and the other study (Hanibuchi et al., 2011) in Japan.

Kweon (1998) examined the impact of exposure to nature in a nearby outdoor space on social interaction in the context of an inner-city high-rise public housing, Chicago's Robert Taylor Home. Participants of the study were 91 African American

older adults aged over 64, whose major sources of income came from government income assistance program. She found that older adults' exposure to nature measured by the amount of trees and grass and the time spent affected social interaction with friends and neighbors and promoted the sense of community. Although this finding is meaningful in the specific study setting, this cannot be generalized to other contexts beyond the inner-city neighborhood. A majority of American communities, whether they are urban or suburban, have neighborhood parks within or in close proximity of residential areas. There are always plenty of opportunities to be exposed to the nature and green spaces in any typical American city.

Hanibuchi et al. (2011) investigated the effect of walkability, community age, and urbanization on social capital, which was measured by trust, norms of reciprocity, attachment to place, horizontal organization, vertical organization, and meeting friends. He used a dataset of 9,414 Japanese older adults age 65 and older in 8 municipalities. The results revealed that there was no relationship between neighborhood walkability and social capital. On the other hand, community age and urbanization had a significant positive effect on many of social capital indices. The land use pattern of Japan is very different from that of American communities. In Japan, most of communities are very walkable. The interpretation of this finding cannot be extended to American communities with car-dependent and segregated land use pattern.

The following several studies made efforts to finding factors that contributed to the sense of community and social capital with a subject of adult residents living in the

United States. The findings of these studies indicated that more walkable neighborhoods have more social interaction among local residents than less walkable neighborhoods.

In relation to sense of community, Lund (2000) looked into two different neighborhoods in Portland, the United States. The participants of the study include106 adult residents, 57 of which came from a pedestrian oriented neighborhoods and 49 from car-oriented suburban neighborhoods. He compared the sense of community in two different neighborhoods. He found that the sense of community is higher in the pedestrian oriented neighborhood. This result is supported by another study (Rogers et al., 2011). The study (Rogers et al., 2011) found that neighborhood walkability had a significant impact on social capital. It compared the levels of social capital in more walkable and less walkable neighborhoods, using a dataset of 694 residents in 10 neighborhoods in 2 cities, Portsmouth and Manchester, New Hampshire. In this study, walkability was measured by the number of walkable locations. Another study (Layden, 2003) upholds the claims of the studies above. The participants of the study consisted of 279 adults from 8 neighborhoods in the city of Galaway, Ireland. The number of walkable destinations significantly influenced social capital.

In the following studies, the importance of walkable commercial areas was recognized as a critical factor in promoting social interaction among local residents. Lund (2003) looked further into the specific elements of neighborhood design promoting sense of community. Sense of community was measured by frequency of unplanned interactions with neighbors, social ties, and supportive acts of neighboring. In the study, he found that having both park and retail access in a neighborhood was a significant

factor in promoting the sense of community. In addition, the satisfaction with the qualities of parks and retails influenced the sense of community. Wood et al. (2010) studied 609 adults between the ages of 20 and 70 in 13 metropolitan counties, Atlanta Region, the Untied States. The study found that the higher commercial floor-area-ratio (FAR) was a determining factor in promoting sense of community, while the presence of mixed use had a negative effect on the sense of community. The result implies that the presence of commercial destinations may inhibit the sense of community unless the urban design is used to create pedestrian-friendly, compact commercial areas. These findings are supported by other studies conducted in Austrailia. Du Toit et al. (2007) looked into 2194 adult residents age between 20 and 65, residing in private dwellings from 32 communities located in Adelaide, South Australia. He identified that net retail areas significantly influenced the sense of community. On the other hand, L Wood et al. (2008) surveyed 335 adult residents of three suburbs in the metropolitan Perth, Western Australia. They found that the number of destinations within 800 meters had a negative influence on social capital. From the literature above, a critical contributing factor for the sense of community and social capital seems to be not the presence of stores or the number of destinations within walking distance but the density of retail areas in a neighborhood.

Table 2 The Relationship between Neighborhood Environment and Social Interaction

	Sample, Data source, and Theoretical framework	Independent Variables and Measures	Dependent Variables and Measures	Confounding Variables	Statistical Analysis and Key Findings
Kweon, 1998	Sample: Chicago's Robert Taylor Home (inner-city age-integrated apartment) residents, 91 older adults aged over 64 Data source: Structured interviews (60-90mins) Theoretical framework: None	Exposure to nature in nearby outdoor common spaces (=1 * 2) 1. Greenness (the amount of trees and grass) – photographed and rated by 22 researchers 2. Time spent	1. Social integration 1) Neighborly activities 2) Friends and Neighbors 2. Sense of community	1. Physical health (Overall health self-rating) 2. Fear of crime Architecture of the 28 buildings is identical, but the amount of trees and grass varies. Socio-economic demographics are nearly identical: 99.7% African American, major sources of income from government income assistance program	Analysis: 1. Correlation analysis among major variables 2. OLS regression analysis to test mediation effects of social integration (Multiple regression) Key findings: Neighborly activities (+) Friends/Neighbors (+) Sense of Community (+) Mediation effect (+)
Lund, 2002	Sample: 106 adult residents from two neighborhoods (57 from traditional, 49 from modern suburb) in Portland, USA Data source: 1. American Community Survey (1996) 2. The Metropolitan Service District Regional Land Information System GIS database 3. Site surveys Theoretical framework: New Urbanism	1. Layout (pedestrian or vehicle-oriented) 2. Perception of walking in neighborhood 3. Trip frequency: leisure walking 4. Trip frequency: destination walking	Sense of community (Psychological Sense of Community Scale)	1. Number of young children in household 2. Length of residency in neighborhood 3. Household tenure 4. Median household income	Analysis: Hierarchical regression model Key findings: Household income (NS) Length of residency (NS) Number of young children (+) Household tenure (+) Neighborhood layout (+) Perception of walking (+) Trip freq. (strolling) (+) Trip freq. (destination) (+)

Table 2 - Continued

	Sample, Data source, and Theoretical framework	Independent Variables and Measures	Dependent Variables and Measures	Confounding Variables	Statistical Analysis and Key Findings
KM Layden 2003	Sample: 279 adults from 8 neighborhoods, Galaway, Ireland Data source: Mail survey (2001) Theoretical framework: None	Neighborhood walkability (individual assessment) Score from 0 to 9 (9 walkable destinations – local corner shop, church, park, local school, community center or recreation center, child care facility, pharmacy, pub, the place that I work)	Social capital: 1. Know neighbors 2. Trust 3. Political participation 4. Social participation	Age, child at home, TV-watching time, religious service, length of residency, education level, the level of commitment to a political party	Analysis: Multivariate ordered logit model Key findings: 1. Know neighbors (+) 2. Trust (+) 3. Political participation (+) 4. Social participation (+)
Lund, 2003	Sample: 494 adult residents from eight neighborhoods, Portland, USA Data source: Mail survey Theoretical framework: New Urbanism	1. Neighborhood environment (N.E) Objective: - Park access only - Retail access only - Park & retail access - Inner-city neighborhood Subjective: - Satisfaction with parks - Satisfaction with retail shops - Perception of walking in neighborhood 2. *Pedestrian travel* (Also used as a dependent var.) - Frequency of strolling trips - Frequency of destination trips	1. *Pedestrian travel* - Frequency of strolling trips - Frequency of destination trips 2. Neighboring behavior (N.B.) - Frequency of unplanned interactions with neighbors (number of times in the previous week respondents waved or said hello to neighbors, stopped and chatted with neighbors) - Local social ties (number of acquaintances within close proximity of home) - Supportive acts of neighboring (frequency with which one gives/receives assistance to/from neighbors)	Personal variables: 1. Socio-demographic Age, gender, race, number and age of children, household income, homeownership, ethnicity 2. Attitudinal - Importance of walking to daily activities - Importance of neighbor interaction	- Neighborhood-level analyses: Analysis of Covariance - Individual-level analyses: Hierarchical regression model (HLM) *Key findings: 1. N.E. & N.B. - Objective & Frequency of unplanned interactions (+) - Objective & Supportive acts (+) - Subjective & all three (frequency, local social ties, supportive) (+) 2. Pedestrian travel & N.B. - Frequency of unplanned interaction (strongly +) - Local social ties (somewhat +) - Supportive acts (NS)

Table 2 - Continued

	Sample, Data source, and Theoretical framework	Independent Variables and Measures	Dependent Variables and Measures	Confounding Variables	Statistical Analysis and Key Findings
Du Toit et al., 2007	Sample: 2194 adult residents age between 20 and 65, residing in private dwellings from 32 communities (=83% of PLACE participants) Data source: 1. The Physical Activity in Localities and Community Environments (PLACE) study in Adelaide, South Australia 2. Mail survey Theoretical framework: None	1.Walkability index (Objective measures) - Dwelling density - Street connectivity - Net retail areas 2. Walking - Walking for transport - Walking for recreation	1. Sense of community 2. Informal social control 3. Social cohesion (trust) 4. Local social interaction (informal and formal)	Socio-demographic variables (age, gender, education, children at home, income, tenure)	Analysis: Multilevel regression analysis Key findings: 1. Walkability index & Sense of community (modest +) 2. Walking for transport mediates the relationship, but the effect is small.
L Wood et al., 2008	Sample: 335 adult residents of three suburbs in metropolitan Perth, Western Australia Data source: 1. Telephone survey in April 2002 2. The Study of Environmental and Individual Determinants of Physical Activity (SEID II) 3. GIS data (Western Australian Department of Planning Infrastructure & Australia Post) Theoretic framework: New Urbanism	Built environment: Individual Level - Dwelling type, - Number of destinations < 800m - Perceived adequacy of facilities - Distance to nearest school, bus stop, shop, park, and post box, suburb level Neighborhood level - Street pattern - Garden maintenance street maintenance - Level of cleanliness	1. Social capital - Trust - Concern - Reciprocity - Civic engagement - Friendliness - Networks - Community concern - Support 2. Feelings of safety 3. Participation in activities	Demographic variables (Gender, annual income, dependent children under 18yr at home, length of residency, age and dwelling type)	Analysis: General linear model Key findings: Social capital 1. Length of residency (NS) 2. Number of destinations within 800m (-) 3. Perceived adequacy of facilities (+) 4. Upkeep (+) Feelings of safety: 1. Number of destination (NS) 2. Perceived adequacy of facilities (+) 3. Upkeep (+)

Table 2 – Continued

	Sample, Data source, and Theoretical framework	Independent Variables and Measures	Dependent Variables and Measures	Confounding Variables	Statistical Analysis and Key Findings
Wood et al. 2010	Sample & Data source Sub-sample of 609 between the age of 20-70 from the US Atlanta SMARTRAQ Study (telephone survey) undertaken in the 13 county metropolitan, Atlanta Region. Theoretical framework: New Urbanism	1. Built environment - Objective: land-use mix/ connectivity/ FAR/net residential density - Perceived: 9 items 2. Physical activity - Brisk walking - Leisure walking - Daily time in vehicle 3. Demographics (individual and neighborhood level)	Sense of community	Demographic variables	Analysis: General linear model Key findings: Leisure walking (+) Home ownership (+) Higher commercial FAR (+) Presence of more mixed use (-) Perception of steep hills (-)
Hanibuchi et al. 2011	Sample: 9,414 Japanese older adults age 65 and older in 8 municipalities. Data source: 1. The Aichi Gerontological Evaluation Study (2003) 2. Mail survey	1. Walkability - Population density - Street connectivity - Land use mix - Availability of parks or green spaces 2. Date of community settlement 3. Urbanization -Latitude	Social capital - General trust - Norms of reciprocity - Attachment to place - Horizontal organization - Vertical organization - Meeting friends	Individual characteristics: Age, gender, marital status, education, income, employment, self-rated health, years of residence	Analysis: Logistic regression model Key findings: 1. Walkability (NS with any of social capital indices) 2. Community age and urbanization (+ with many of social capital indices)

Table 2 - Continued

	Sample, Data source, and Theoretical framework	Independent Variables and Measures	Dependent Variables and Measures	Confounding Variables	Statistical Analysis and Key Findings
Rogers et al. 2011	Sample: 694 residents in 10 neighborhoods in 2 cities, Portsmouth and Manchester, New Hampshire Data source: 1. Mail survey Theoretic framework: None	Walkability (Score = number of walkable locations out of 13 locations)	1. Social capital Trust/ Civic participation/ Having friends at home/ Volunteering/ Club meeting/ TV as a main entertainment 2. Number of walkable destinations 3. Time willing to walk to destinations 4. Travel behavior Frequency of walking & biking/ % of commuting by car	Age, income, education, self-rated health, attending religious services, being conservative, being liberal	Analysis: Simple comparison between more walkable and less walkable neighborhoods Key results: 1. Social capital (+) 2. The number of destinations (+) 3. Time willing to walk to destinations 4. Walking (+)
Wilkerson et al., 2012	Sample: 128 resident in 10 neighborhoods in Portland, Oregon (Age info not provided) Data source: 1. Street audit 2. Interview survey 3. Tax-assessor data Theoretic framework: None	Physical environment - Overall physical environment score - Front porches - Traffic-calming devices - Bars on windows - Litter/graffiti - Sidewalk connectivity (Street audit instrument - the Senior Walking Environmental Assessment Tool (SWEAT))	Neighborliness (6 items measuring interaction, trust, and reciprocity)	- Race - Self-reported health - Perception of safety after dark - Length of residency - Year house built - Market value of house - Homeownership	Analysis: General Linear Model Key results: 1. Front porches (+, NS) 2. Traffic-calming (-, NS) 3. Bars on windows (0, NS) 4. Litter/graffiti (-, NS) 5. Sidewalk connectivity (+, NS)

2.4. Places that Foster Social Interactions for Older Adults

American communities lack places for social interaction. People need places to build and maintain social ties. Even casual social relationships or weak ties have been identified as important contributors to social support (Henning & Lieberg, 1996). This informal relationship with neighbors is more important for older adults than any other age groups (Guest & Wierzbicki, 1999; Henning & Lieberg, 1996). In an interview of diverse groups of people (Baum & Palmer, 2002), participants' idea of "community" was defined by the presence or provision of amenities, common meeting places, resources, and facilities in neighborhood. They also noted that it was important to have places in their local area, outside their home, that enables people to mix (Baum & Palmer, 2002).

Having a place to meet people outside the home has more significance to older adults for two reasons. First, retirement tends to reduce social relationships and lessen the frequency of social contact (Herr & Mobily, 1991). Furthermore, since older adults are likely to become frail and encounter functional limitations, their daily activities are bound to be within their home or close vicinity of the home. Thus, having a place that provides social support and companionship is increasingly important to older adults (M. S. Rosenbaum, Ward, Walker, & Ostrom, 2007).

A meeting place is a venue for opportunity where older adults can become more socially connected with their neighbors and friends. Casual social relationships, i.e. weak social ties, are developed and maintained when there are opportunities for everyday informal face-to-face contact (Festinger, Back, & Schachter, 1950;

Granovetter, 1983; Greenbaum, 1982; Skjaeveland & Garling, 1997). After experiencing repeated casual contact, neighbors become acquaintances, engage in social activities, or develop friendships (Kweon et al., 1998).

An informal public gathering place, so called a *third place* (Oldenburg & Brissett, 1982) has been recognized as a hub for social vitality of a community. It is a meeting place, i.e. a place to socialize and hang out with friends. The first place is home, second is the workplace, and the third place is where you spend your leisure time outside your home (Oldenburg & Brissett, 1982). What are the places that people consider as third places? Through an interview of 51 people in three cities, Mehta & Bosson (2009) identified commercial places that people perceive as third places in the context of three Main Streets: Massachusetts Avenue in the Central Square neighborhood in the city of Cambridge (population: 101,355 as of 2000), Harvard Street in the Coolidge Corner neighborhood in the town of Brookline (population: 57,107), and Elm Street in the Davis Square neighborhood in the city of Somerville (population: 77,478). The total number of business in three streets was 120. The study found that people considered 17 businesses as third places, which include coffee shops (6), bars/pubs (4), restaurants (2), a convenience store (1), a deli/ local supermarket (1), an ice-cream shop (1), a bookstore (1), and a thrift store (1).

Ray Oldenburg who coined the term, “third place”, described several distinct characteristics of third places such as free to come and go, no social and economic status barriers, convenient location, welcoming atmosphere, not very impressive in appearance, and existence of people who come on regular basis (Oldenburg, 1997). Since the concept

of third place was introduced, there have been continuing effort to find characteristics of third places through empirical studies. Cheang (2002) examined a large social gathering of seniors at a fast-food restaurant located in a local shopping center in Honolulu, Hawaii. Through observation and interview of 26 Japanese Americans (age 57 to 83) who were born and educated in Hawaii, he found that seniors come to the place just to "be or play with friends." The central components of the place were sociability, play, and laughter. The reasons why they come to the place were good accessibility, good sense of security, and restaurant employees and regular patrons. The place was also characterized by a central and convenient location as well as large seating capacity. Participants at the fast-food restaurant mentioned that they did not like a senior center because it is over-structured. Mair (2009) examined 18 curling clubs across rural Canada and found that accessibility, accommodation, and membership were central to the vitality of third places. Mehta & Bosson (2009) also found the elements of commercial third places that support social behavior. They include personalization of street front by business, permeability of the business to the street, seating provided by the business, shelter provided by the business on the street space. Paul Hickman (2013) examined the importance and function of third places in deprived neighborhoods through interview with 180 residents in six deprived neighborhoods across Great Britain. He found that third places were important medium for social interaction in deprived neighborhoods. However, the level of importance varied by population group. Different population groups preferred different types of meeting places. For example, residents with young children are more likely to visit parks while older residents are more likely to visit

community centers for socializing. In addition, his research (Hickman, 2013) revealed that the most frequent users of third places were people who spend most of their day at home such as the unemployed, people with poor health, retirees, and people with childcare responsibilities. It also found that residents considered shops as particularly important third places. The biggest barrier in using third places was the unfriendliness of long standing users. Nichole & Campbell (2014) investigated the atmosphere of third places in the context of Continuing Care Retirement communities (CCRC) in the city of Gainesville, Florida. The residents of CCRC were predominantly of upper middle-class, Caucasian residents. Through a survey of independent living residents (n = 179) in CCRC, he found that lively (vs. subdued), playful (vs. serious), welcoming (vs. unfriendly) contributed to residents' visit. In the regression analysis, the control variables were age, gender, home range (residents' daily path of travel), and residents' preference for social interaction (how much the residents enjoy social interaction).

Several researchers examined the function of third places, particularly social function and health benefit. Rosenbaum, Ward, Walker and Ostrom (2007) identified the social support from third place relationships. They interviewed 83 customers at a Chicago suburban restaurant with ages ranging from 37 to 86 years (M = 63.77, SD = 12.25). All the respondents were white, 61% married, 21%widowed, 12% single, and 6% divorced or separated. The study found that even though the relationships created at the third place were weak, the customers received social support from third-place relationships that corresponded to their perceived support deficits from family members or co-workers. Rosenbaum, Sweeney, and Windhorst (2009) explored an activity-based

café and its health benefit for older adults. The findings show that the hybrid café combining social activities with a traditional café offered its senior customers relief from mental fatigue, and improved health. These two studies show that the commercial third place functions as a restorative environment for older adults and suggest that they should be encouraged as a business strategy. Troy, Glover, Diana, & Parry (2009) examined a therapeutic function of Gilda's Club of Greater Toronto in Canada. Gilda's club is a place that offers programs and spaces to the people, who once suffered from cancer, currently suffer from cancer, or have a family member with cancer. They interviewed 26 members of the club, most of whom were current patients with cancer. The age range of participants was from 19 to 71 years old. The study revealed that members considered the place as a therapeutic place and the atmosphere of "home away from home or hospital" greatly contributed to their visit.

2.5. Research Gap

There was no single study that showed a comprehensive list of older adults' third places at community or city level. Previous studies were mostly conducted in a specific setting such as a coffee shop or fast-food restaurant (Cheang, 2002; Rosenbaum, Sweeney, and Windhorst, 2009; Troy, Glover, Diana, & Parry, 2009). In addition, very few studies were conducted in the context of U.S as shown in Table 3). This study filled this gap by identifying third places of older adults living in single-family homes in two American cities. The following are the specific contexts of existing literature, which examined the relationship between third places and social interaction and included older

adults to some degree in participants.

Table 3 The Context of Previous Studies on Third Place and Social Interaction

(Literature that did not include older adults as a subject were excluded)

Country	Study Context
UK	180 adult residents living in deprived neighborhood across Britain (Paul Hickman, 2013)
Canada	18 curling clubs across rural Canada (Mair, 2009)
	26 members (age 19-71, 22 cancer patients) of Gilda's Club Greater Toronto, Canada (Troy, Glover, Diana, & Parry, 2009)
USA	26 Japanese older adults (age 57-83) at a fast-food restaurant in Honolulu, Hawaii (Cheang, 2002)
	83 customers (age 37-86) of Sammy's, a Chicago suburban diner (Rosenbaum, Ward, Walker and Ostrom, 2007)
	179 independent living residents in Continuing Care Retirement communities (CCRC) (Nichole & Campbell, 2014)

Secondly, this study used an integrated framework of social connectedness in order to investigate the impact of third place on social connectedness. Previous studies neglected to consider other factors such as health and self-efficacy. This study thoroughly examined correlated factors of older adults' social isolation from the previous studies and controlled those correlates in the analysis.

Third, in growing trend of seniors' returning to college towns (Lubow, 1999; Hu, Wei, Schlais & Yeh, 2008; Forbes, 2014), it is timely to explore their socializing behavior and pattern in terms of built environment and health. There was no single literature found on this issue in the context of college cities or towns. The study was conducted in two adjacent college cities: City of College Station and City of Bryan in

Texas. A college town or city in the United States have become an emerging popular retirement place for baby-boomers (Lubow, 1999; Hu, Wei, Schlais & Yeh, 2008; Forbes, 2014). College towns usually have several distinct characteristics such as relatively low cost of living, affordable range of housing price, availability of hospitals and healthcare facilities, and good access to recreational and educational opportunities. These attributes of college towns are similar to the deciding factors in choosing a retirement location. Significant deciding factors that influence older adults' retirement migration are as follows (Hu, Wei, Schlais & Yeh, 2008): cost of living (Savageau, 1999; Hass & Serow, 1993), availability of quality housing and adequate hospitals and healthcare facilities, crime rate and community security (Hass and Serow, 1993), recreational opportunities and cultural amenities (Hass & Serow, 1993; Savageau, 1999). Although warm climate is usually an important factor motivating retirees to move from the north to the south (Cuba & Longino, 1991; Longino, Perzynski, & Stoller, 2002), the climate attraction is not a deciding factor due to people's diversified preference of climate (Longino, Perzynski, & Stoller, 2002).

Another major contribution of this research lies in the wide coverage of study subject. This study included both third-place users and non-users for participants. The impact of third place use on social connectedness cannot be fully understood if non-users are excluded in participants. Previous studies, except for one study conducted in several deprived neighborhoods of Britain (Paul Hickman, 2013), did not include people who do not have a third place. The subject of this study was total population of older adults (+65) living in their own single-family homes in two cities (N=5,895). The randomly selected

19.5% of the population (N=1,150) were visited door-to-door for survey in Spring 2014. The response rate was 27.8%. Third place users and non-users accounted for 45% and 55% of participants respectively.

Furthermore, a single-family home in residential area is a typical residential type of American households. A majority of older adults still live and continue to live in this environment even though some people will relocate to nursing home, assisted living, or senior communities. This era is marked by burgeoning preference for aging in place and active aging. Thus, it is essential to have a comprehensive understanding of older adults' socializing in the context of their current daily living environment. In this sense, the findings of this study will represent the current behavior and perception of older adults living in a typical American residential area.

Finally, in a dearth of literature on American older adults' use of third places, this study will contribute to understanding of third places by identifying the types of third places, visit frequency, specific attributes of places contributing to older adults' visit such as atmosphere, activities, and people.

CHAPTER III

RESEARCH METHOD AND DATA

3.1. Conceptual Framework and Research Hypotheses

3.1.1. Conceptual Framework

Social isolation is the low level of social connectedness. Since this study intends to measure a wide range of social connectedness, this study used a term, social connectedness, instead of social isolation. Social connectedness is influenced by many factors as reviewed in Chapter II. The conceptual framework will be built on (1) risk factors for older adults' social isolation, (2) neighborhood environment correlates with sense of community and social capital, and (3) older adults' use of third places.

Risk factors for older adults' social isolation:

The correlates with older adults' social isolation is as follows:

- Age: being older (Kobayashi, Cloutier-Fisher, & Roth, 2009)
- Marital status: being single/ widowed/ divorced (Kobayashi et al., 2009)
- Gender: being female (Kobayashi et al., 2009)
- Living alone (LaVeist, Sellers, Brown, & Nickersn, 1997; Haven, Hall, Sylvestre, & Jivan, 2004; Kobayashi et al., 2009)
- Significant Life Event: recent death of spouse & death of relatives and friends/ close neighbors (Wenger & Burholt, 2004), recent relocation of residence to a new area (Kobayashi et al., 2009), and retirement (Hovaguimian & Stuckelberger, 1988)

- Health status: being in poor health condition (Bassuk, Glass, & Berkman, 1999; Yeh & Liu, 2003; Havens, et al., 2004; Barnes, De Leon, Wilson, Bienias, & Evans, 2004 ; Kobayashi et al., 2009)
- Life-space mobility: currently non-driving and low level of out-of-home social activity (Mooney, 2003)
- Perceived neighborhood safety from crime: fear of crime in the residential neighborhood (Thompson & Krause, 1998)
- Self-efficacy (Cohen-Mansfield & Parpura-Gill, 2007): low self-efficacy in social situations
- Financial difficulty (Howat et al., 2004)

In regards to a correlate of social isolation, frequent attendance of religious services (Ellison & George, 1994; Kobayashi et al., 2009), religious places can be a potential third place for older adults, which is already included in measuring the use of third places. Thus, this was excluded as an independent construct in the conceptual framework. Homeownership status (Kobayashi et al., 2009) will be also excluded because the subject of this study is only older adult homeowners living in their own home.

Neighborhood environment correlates with sense of community and social capital:

- Access to amenities (Lund 2002; Layden 2003; Lund 2003; Du Toit et al. 2007; Rogers et al. 2011)

Older adults' use of third places:

- Use of a third place (Oldenburg & Brissett, 1982; M. S. Rosenbaum, Ward, Walker, & Ostrom, 2007; Cohen-Mansfield & Parpura-Gill, 2007; Mehta & Bosson, 2009)

In relation to social connectedness, the use of third places was examined in three aspects: (1) whether an older adult has a third place or not affects social connectedness, (2) whether the number of third places affects social connectedness for third place users, and (3) whether weekly total visit frequency affects social connectedness for third place users.

3.1.2. Research Hypotheses

Previous studies on third places were conducted within a context of third place and concluded that third places play an important role for social interaction and health. It was too early to come up with that conclusion because they did not include a group of people who did not use or have a third place. The actual impact of third places on social connectedness can only be recognized and validated when both groups of people who have a third place and do not have a third place are considered in the analysis. Thus, this study aims to validate the statement that having a third place affects social connectedness, including both groups.

Hypothesis 1: Older adults having a third place are more socially connected than those without a third place.

If having a third place affects social connectedness, a question still remains for the group of people who have a third place, i.e. whether having "diverse" third places makes any difference in social connectedness in comparison with the effect of having only a single third place. The diversity can be measured by the number of third places.

Hypothesis 2: Among those who have a third place, the more third places older adults have, the more they are socially connected.

When an individual has a third place, another question that can be raised is that whether people who go to third places more frequently is more socially connected than those who go there less frequently. The impact of visit frequency will be explored among the group who have a third place.

Hypothesis 3: Among those who have a third place, the more often older adults visit third places, the more they are socially connected.

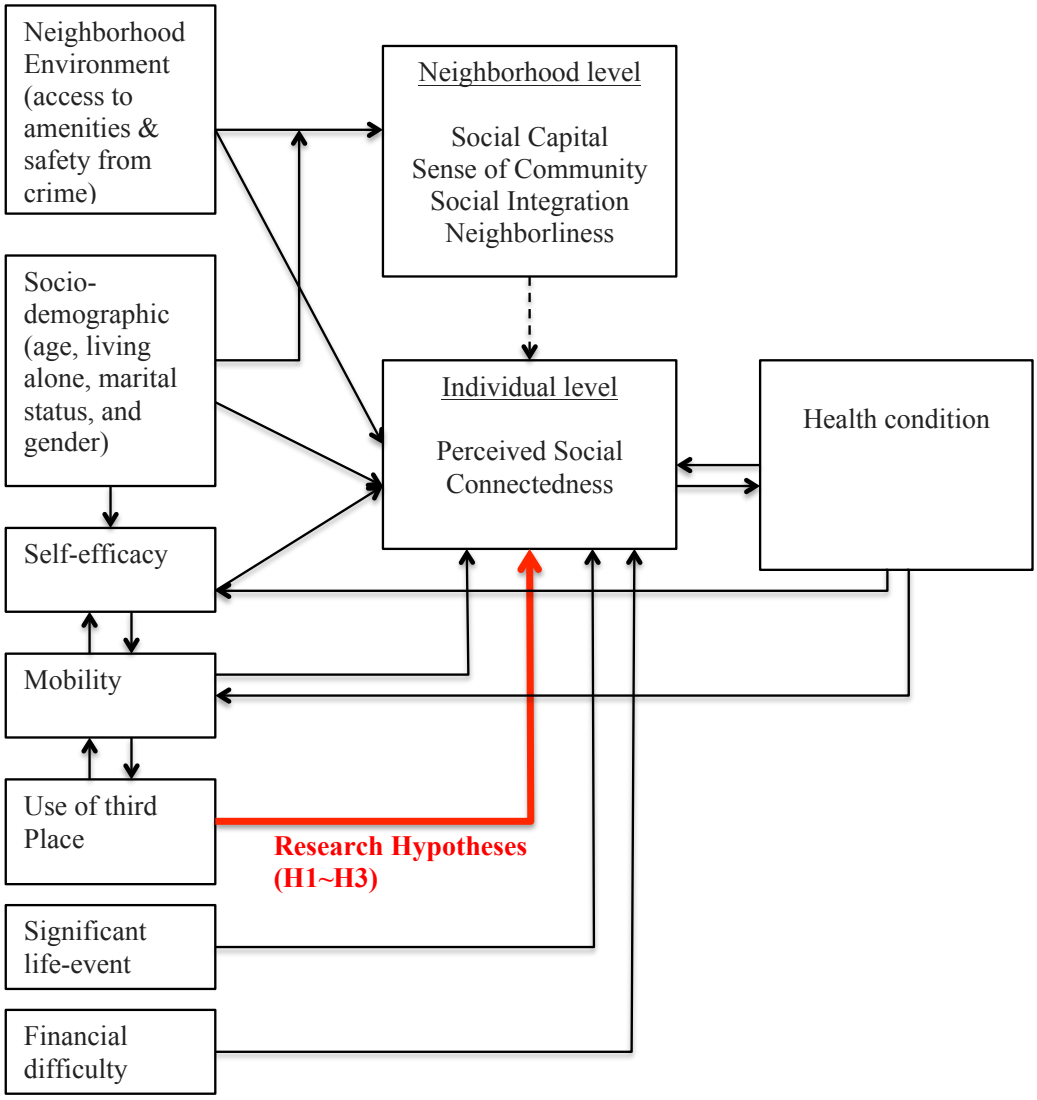

Figure 1 Conceptual Framework of Older Adults' Perceived Social Connectedness

3.2. Measuring the Use of Third Places (Independent Variable)

Due to lack of survey instrument measuring the use of third places, this study developed a survey instrument measuring older adults' use of third places. Three critical questions were raised in order to develop the survey instrument: (1) how third places will be defined, (2) how third places will be categorized, (3) what qualities of third places will be measured and how they will be measured.

According to Ray Oldenburg (1989) who coined the term "third place", third places are simply informal meeting places. However, he described several distinct characteristics of third places such as free to come and go, no social and economic status barriers, convenient location, welcoming atmosphere, not very impressive in appearance, and existence of people who come on regular basis (Oldenburg, 1997). Since the concept of third place was introduced, there have been continuing effort to find characteristics and functions of third places through empirical studies. Previous studies on third places in Chapter II show that third places vary in types and characteristics.

However, it was found that two things were common in all studies on third places. People go there "frequently in the cycle of their daily life" and "social interaction" occurs. From the review of previous studies on third places, these two things are the essence of "third place" concept. For this reason, this study developed a survey question to check if a participant has a third place as follows: "Do you have a place to socialize that you visit regularly at least once a week?" This is the operationalized

definition of third place in this study. The use of third places were measured by the following 8 questions:

- Do you have a place to socialize that you visit regularly at least once a week? Yes/ No
- If yes, *how many* places to socialize do you have?
- What is the name of the place?
- How many times do you go there per week?
- How do you usually get there? (Example: by driving, walking, biking, or taking a bus)
- How long does it take for you to get there from home by your chosen transport mode above?
- To what extent do the following items contribute to your visit to the place?

Another important question still remains. Although several scholars examined characteristics and functions of third places, there was no single study that categorized types of third places with a standard system. The types of third places were categorized through Land-Based Classification Standards (LBCS). LBCS is a standardized land-use coding for local, regional, and state land-use planning applications, which was produced in 2000 by the American Planning Association and its partners (American Planning Association, 1999). LBCS classifies land uses across five dimensions: activity, function, structure type, site development, and ownership (American Planning Association, 1999).

Categorization of third places was based on the LBCS by function, i.e. the economic function or type of establishment using the land.

The remaining question is what qualities of third places will be measured and how they will be measured. Considering the findings of previous studies on third places, this study selected 7 attributes of third places that may affect older adults' visit: friendly people, food & drink, cost, seating, atmosphere, location, and activities. In order to measure how much each attributes of third places contributes to older adults' visit, a 5-point Likert scale was developed. Participants were asked to write a score (Great deal=4, Much=3, Somewhat=2, Little=1, and Never=0) by each item that indicates how much it contributes to their visit to each place.

Table 4 Attributes of Third Places

Attributes	Contributing factors	Sources
Friendly people	Friendly regular patrons and employees	Oldenburg (1997); Cheang (2002); Mair (2009); Hickman (2013); Nichole & Campbell (2014); Rosenbaum, Ward, Walker and Ostrom (2007); Rosenbaum, Sweeney, and Windhorst (2009), Troy, Glover, Diana, & Parry (2009)
Food & Drinks	Presence of food and drinks	Oldenburg (1997); Cheang (2002); Rosenbaum, Ward, Walker and Ostrom (2007)
Cost	Low cost of use or free	Oldenburg (1997); Cheang (2002); Hickman (2013)
Seating	Spacious & comfortable	Oldenburg (1997); Cheang (2002); Mehta & Bosson (2009)
Atmosphere	Lively, welcoming, & playful atmosphere	Oldenburg (1997); Cheang (2002); Mair (2009); Hickman (2013); Nichole & Campbell (2014); Rosenbaum, Ward, Walker and Ostrom (2007); Rosenbaum, Sweeney, and Windhorst (2009); Troy, Glover, Diana, & Parry (2009)
Location	Located centrally or within a walking distance	Oldenburg (1997); Cheang (2002); Mair (2009); Hickman (2013)
Activities (Programs)	Presence of senior friendly programs	Rosenbaum, Sweeney, and Windhorst (2009); Troy, Glover, Diana, & Parry (2009)

Table 5 Variables and Coding Scheme

Variables	Scale	Scoring/ Coding scheme
Dependent variable		
Perceived Social Connectedness	Friendship Scale (Hawthorne, 2008)	6 items Scoring for each item: 0~4 Score range: 0-24 0-11: very socially isolated 12-15: isolated or low-level social support 16-18: some social support 19-21: socially connected 22-24: very socially connected
Independent variable		
Having a third place	Newly created	Yes=1, No=0
Number of third places	Newly created	Ratio variable
Total weekly visit frequency	Newly created	Ratio variable
Controlling variable		
Age		Ratio variable
Marital status	American Community Survey	Currently married=1, Widowed/Single/Divorced/Separated/Single=0
Living alone or not	American Community Survey	Living alone=1, living with someone=0
Gender	American Community Survey	Female=1, male=0
Significant Life-event	Newly created	Yes=1, No=0 Death of close family member/ Death of close friend/ Personal injury or illness/ Retirement/ Change in residence (in the past three years)
Property value (as a proxy of financial condition)	County Tax Office	Ratio variable
Self-efficacy	General Self Efficacy Scale (Schwarzer & Jerusalem, 1995)	10 items Scoring for each item: 1~4 Total score range: 10~40
Health condition	Self-rated Health Scale (SRH)	1 item Excellent=5, Very good=4, Good=3, Fair=2, and Poor=1
Mobility	The University of Alabama at Birmingham Study of Aging Life-Space Assessment (LSA)	15 composite items Life-space level * Frequency * Independence Total score range: 0~40
Access to amenities	Subscale of Neighborhood Environment Walkability Scale (Cerin, Saelens, Sallis, and Frank, 2006)	3 items Scoring for each item: 1~4 Mean of item responses Higher score denoting higher walkability
Safety from crime	Subscale of Neighborhood Environment Walkability Scale (Cerin et al., 2006)	3 items Scoring for each item: 1~4 Mean of item responses Higher score denoting higher walkability

3.3. Measuring Perceived Social Connectedness (Dependent Variable)

Perceived social connectedness was measured by the Friendship Scale (Hawthorne, 2008), which consists of six items: (1) "It has been easy to relate to others," (2) "I felt isolated from other people," (3) "I had someone to share my feelings with," (4) "I found it easy to get in touch with others when I needed to," (5) "When with other people, I felt separate from them," and (6) "I felt alone and friendless." The answer choice used a 5-point Likert scale: almost always, most of the time, about half the time, occasionally and never. Each item was scored from 0 to 4. The total sum of all six items could possibly range from 0 to 24. Higher scores indicate greater levels of perceived social connectedness.

3.4. Measuring Control Variables

Control variables include age, marital status, whether they live alone, gender, significant life-event, property value (as a proxy of financial condition), self-efficacy, health condition, mobility, access to amenities, and safety from crime.

For age, the participants were asked to write their year of birth. The questions on gender and marital status came from the American Community Survey. Answer choices include married, widowed, divorced, separated, and never married. Since a majority of participants (74%) were married, other categories (19% widowed, 5% divorced, and 1.2% others) were truncated to married and others.

For the "living alone" variable, participants were asked to answer yes (=1, live alone) or no (=0, do not live alone).

In regards to significant life events, participants were asked, “In the past three years, which of the following major life events have taken place in your life?” Recent death of spouse and death of relatives or friends/close neighbors (Wenger & Burholt, 2004), recent relocation of residence to a new area (Kobayashi et al., 2009), and retirement (Hovaguimian & Stuckelberger, 1988) were predictors of social isolation in previous studies. Thus, the answer choices included death of close family members, death of close friends, personal injury or illness, retirement, change in residence, and none.

Financial difficulty (Howat et al, 2004) is another correlate of social isolation. Considering the fact that the subjects of this study are all single-family homeowners, their current financial status may not be poor. Since income data is sensitive, the survey did not include a question measuring income level. Instead, this study used their own property value as a proxy of their income. This data was collected through the county tax office website.

Self-efficacy is the ability to cope with daily hassles including ability to be confident to socialize with others. The General Self Efficacy Scale (GSC) (Schwarzer, R., & Jerusalem, M. 1995) was used in measuring self-efficacy. This scale consists of 10 items: (1) I can always manage to solve difficult problems if I try hard enough, (2) If someone opposes me, I can find the means and ways to get what I want, (3) It is easy for me to stick to my aims and accomplish my goals, (4) I am confident that I could deal efficiently with unexpected events, (5) Thanks to my resourcefulness, I know how to handle unforeseen situations. (6) I can solve most problems if I invest the necessary

effort, (7) I can remain calm when facing difficulties because I can rely on my coping abilities, (8) When I am confronted with a problem, I can usually find several solutions, (9) If I am in trouble, I can usually think of a solution, (10) I can usually handle whatever comes my way. Respondents were asked to answer either mostly true (=4), moderately true (=3), hardly true (=2), or not at all true (=1). The scores were summed up to yield the final composite score with a range from 10 to 40. A higher score means high self-efficacy.

Health was measured by the Self-Rated Health Scale. Respondents were asked by a question "In general, would you say your health is…?" The answer choices include excellent (=5), very good(=4), good(=3), fair(=2) or poor(=1).

Mobility was measured by the University of Alabama at Birmingham (UAB) Study of Aging Life-Space Assessment (LSA). The LSA measures mobility based on how far and how often a person travels to each of the defined levels, as seen in Figure 3, and any assistance needed to get to each level (Peel, Claire, et al., 2005). There are five spatial categories. For each spatial category, participants were asked the same set of three questions. For example, of their neighborhood (life-space 3), they were asked, "During the past four weeks, have you been to places in your neighborhood, other than your own yard or apartment building?" The answer choices include yes or no. The second question was "How often did you go there?" with five answer choices: less than one time per week, 1-3 times per week, 4-6 times per week, and daily. The third question was "Did you use aids or equipment? Did you need help from another person?" Three answer choices were given: personal assistance, equipment only, and no equipment or

personal assistance.

To measure access to services and neighborhood safety from crime, the two subscales of Neighborhood Environment Walkability Scale (Cerin, Saelens, Sallis, & Frank, 2006) were used. Access to services was measured by using a scale with three items: (1) "Stores are within easy walking distance of my home." (2) "There are many places to go within easy walking distance of my home." and (3) "It is easy to walk to a transit stop from my home." The answer choices range from "strongly agree" to "strongly disagree." The score on each item were summed up and averaged. A higher score means higher walkability in the aspect of access to amenities.

Neighborhood safety from crime was measured using a subscale of the Neighborhood Walkability Scale. Respondents were asked to check the response that best characterizes their feelings about their neighborhood. The subscale consists of the following three items:

- "There is a high crime rate in my neighborhood."
- "The crime rate in my neighborhood makes it unsafe to go on walks during the day."
- "The crime rate in my neighborhood makes it unsafe to go on walks at night."

The answer choices include "strongly agree," "somewhat agree," "somewhat disagree," and "strongly disagree." The scores were summed and averaged. Higher score means higher safety.

3.5. Research Design

3.5.1. Study Area

A college town or city in the United States has become an emerging popular retirement place for baby-boomers (Lubow, 1999; Hu, Wei, Schlais & Yeh, 2008; Forbes, 2014). Significant deciding factors that influence older adults' retirement migration are as follows (Hu, Wei, Schlais & Yeh, 2008): cost of living (Savageau, 1999; Hass & Serow, 1993), availability of quality housing and adequate hospitals and healthcare facilities, crime rate and community security (Hass & Serow, 1993), and recreational opportunities and cultural amenities (Hass & Serow, 1993; Savageau, 1999). Although warm climate is usually an important factor motivating retirees to move from the north to the south (Cuba & Longino, 1991; Longino, Perzynski, & Stoller, 2002), the climate attraction is not a deciding factor due to people's diversified preference of climate (Longino, Perzynski, & Stoller, 2002).

Despite the burgeoning popularity and importance of college cities and towns as retirement communities, older adults' use of third places and social connectedness have never been examined in a setting of college city. Thus, this study has chosen two adjacent college cities in Texas: College Station and Bryan. This study area has characteristics of typical college towns such as relatively low cost of living, affordable range of housing price, availability of hospitals and healthcare facilities, and good access to recreational and educational opportunities. As of 2003, Cities of College Station and Bryan had population of 97,801 and 78,061 respectively.

Table 6 Characteristics of the Study Area

Data source: US Census, American Fact Finder

	College Station	Bryan	Texas	USA
Land Area (square miles)	40.3	43.3		
Population (2013)	100,050	78,709		
Older adults age 65+	4,702 (4.7%)	6,958 (9.1%)	10.3%	13%
Race (2010)				
White Alone	76%	43%	68%	80%
Hispanic	14%	36%	32%	20%
Estimated median house value (2011)	$178,300	$105,900		
Crime rate	229.8	334.8		319.1

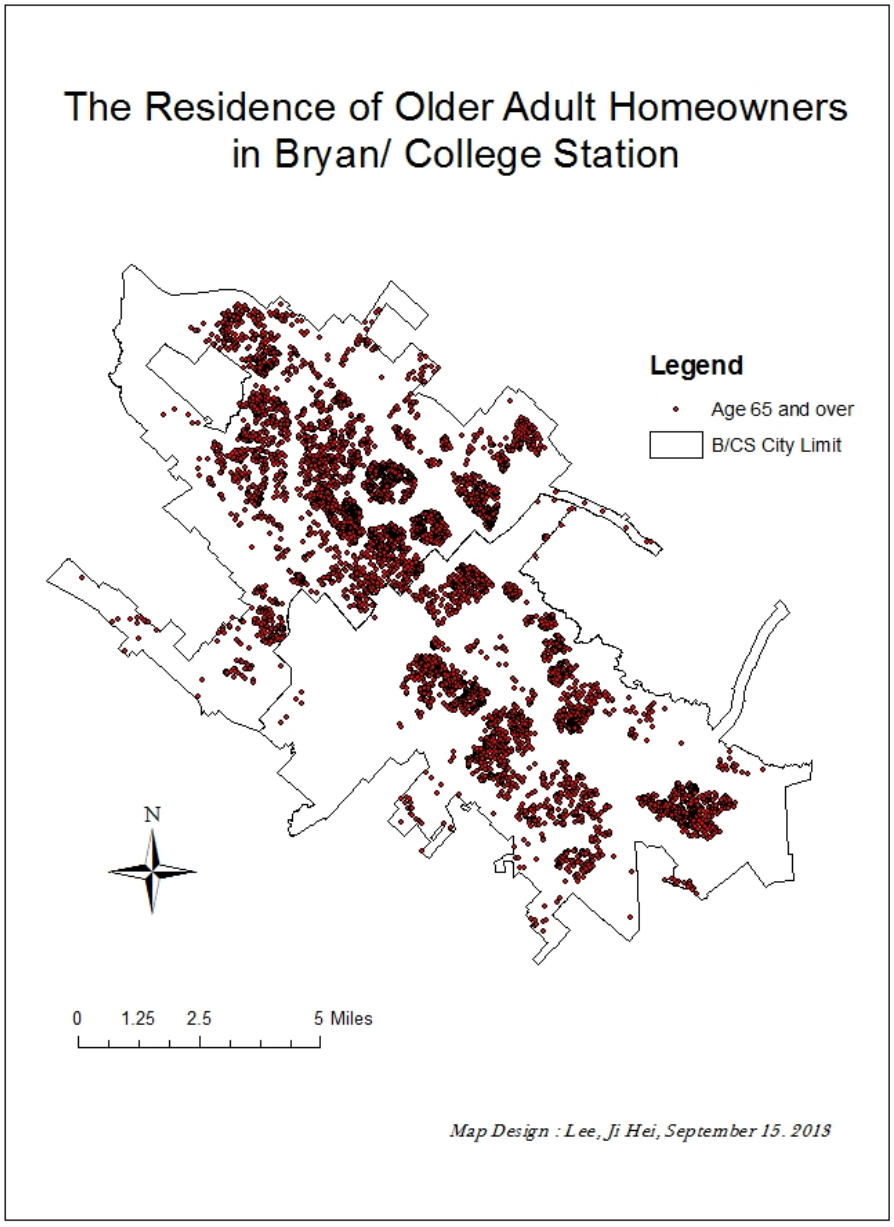

Figure 2 Mapping the Addresses of Older Adult Homeowners under Homestead Exemption, Cities of Bryan and College Station, Texas

3.5.2. Subjects, Participants, & Survey Method

Subjects are elderly residents age 65 and over, who are under homestead exemption: homeowners over the age of 65, residing in their own single family homes, in cities of Bryan and College Station. Their names and addresses were acquired from the Brazos County Tax Office and geocoded to the map (Figure 2), of which the total number was 7,570. This number represents the population of subjects, i.e. the number of older adult homeowners who live in their own homes. It accounts for 66.8% of total older adult population, 11,333, of two cities. This is slightly higher than the average 63.3% homeownership rate in Texas and the 64.9% homeownership rate in the USA. From the list of addresses, 15% (1,150) of the total population of subjects was selected by a simple random sampling method. In Excel software, the function called "=RAND( )" generates a random value between 0 and 1 into an empty cell. The simple random sampling was conducted by assigning random values by RAND function, sorting out by random values, and selecting 1,150 addresses. The selected 1,150 households out of 5,895 were visited by door-to-door from late March to early May in 2014. In total, 320 older adults (27.8% of 1,150) participated in the study, and 305 (26.5% of 1,150) completed the survey.

In order to increase the response rate, this study used the Drop-off and Pick-up survey method (Stover & Stone 1974; Olsen et al. 1998; Melevin, Dillman, Baxter, & Lamiman, 1999; Steele et al. 2001; Riley & Kiger 2002; Allred & Ross-Davis, 2011). This method has been widely used as an alternative to sending self-completion surveys in the mail. The Drop-off and Pick-up survey method has several advantages compared to mail surveys (Melevin et al., 1999). Through face-to-face contact, researchers are able

to explain the purpose of the study and the importance of the potential respondents' participation. Additionally, they are able to determine whether the person meets the eligibility requirements of survey. The difficulty in returning the survey is also reduced because the researcher will pick up the questionnaire.

The survey was conducted with the following procedure. First, the sample 1,150 single family homes were visited door-to-door in daytime between 9:00 a.m. and 6:00 p.m. by one surveyor from late March to early May in 2014. The surveyor was a female Asian graduate student. During the visit, the surveyor explained the purpose of the study to the residents and checked the age eligibility. When residents were willing to participate, a survey questionnaire was delivered by hand. She also asked participants to self-administer the survey questionnaire at their convenience and to put it in envelope under the doormat of their front door for later-retrieval. A specific pick-up time range was given to the participants, for example, 3 p.m. to 6 p.m. on April 1st. Survey questionnaires were picked up within 48 hours.

In order to assess the test-retest reliability, 10% of previous participants were revisited in June. Due to the limited time and funding for this research, all participants could not be reached. The 10 % (n=30) was randomly selected among the previous participants (n=305). The Drop-off and Pick-up procedure was the same as the initial visit. The same copy of the previous survey questionnaire was delivered. Two people were not at home at revisit and could not be reached, however. The 28 other participants completed the survey questionnaire (n=28). After the survey questionnaires were collected, the data was manually recorded and coded, using Excel. Then, both data entry

and coding were double-checked manually. Among the retrieved 320 surveys, 14 questionnaires were incomplete leaving most of survey questions unanswered, and thus excluded in analysis.

3.6. Data Analysis

Data analyses took the following steps. The first section of analysis aims to understand the respondents' socio-demographic and economic characteristics, perceived social connectedness, general health condition, life-space mobility, self-efficacy, and the use of third places. This was conducted through descriptive statistics such as mean, standard deviation, min/max range, frequency graphs and tables.

The second part of the analysis seeks to identify what types of places older adults use for socializing on regular basis, i.e. what third places they have (study aim 1) and to find contributing attributes of places to older adults' visit, i.e. important qualities of third places (study aim 2). Classification, ranking, and a distributional table were used.

The third part of analysis examined the impact of third places on older adults' perceived social connectedness as follows.

- First, reliability of scales was tested: (1) internal consistency reliability and (2) test-retest reliability. Since the survey was conducted through only one surveyor, inter-rater reliability test was not necessary. Internal consistency reliability was measured by Cronbach's alpha. On the other hand, a test-retest reliability check was conducted to check the reliability of the scale over time. This was examined by intra-class correlation coefficient (ICC).

- Secondly, a bivariate analysis was conducted to examine any associations among variables, which was measured by the correlation coefficient r.
- Thirdly, the collected survey data sets were examined to determine whether they meet key assumptions for the Ordinary Least Squares regression: (1) whether the standard errors of the dependent variable, i.e. perceived social connectedness, is normally distributed or not, and (2) whether the error variance is constant across all values or not. To check the normal distribution of standard errors, the following three tests were conducted: Skewness/Kurtosis test for Normality (D'agostino, Belanger, & D'Agostino Jr, 1990), Shapiro-Wilk test (Shapiro and Wilk,1965), and Shapiro-Francia test (Shaprio and Francia 1972). For checking heteroscadsticity of error variance, Breusch-Pagan and Cook-Weisberg test were conducted (Breusch & Pagan, 1979; Asteriou & Hall, 2011). Since the data did not meet the normality assumption, the dependent variable's transformation was tried. However, all types of transformation functions were unable to make distribution normal.
- To deal with these two concerns, i.e. non-normality and heteroskedasticity, the regression with robust standard errors was conducted (Berry, & Feldman, 1985). Regression with robust standard errors uses the Huber/White/Sandwich estimators of standard errors. This robust standard error deals with minor problems about normality and heteroskedasticity (Davidson & McKinnon, 1993).
- Regression with robust standard errors was conducted in the following steps. First, a base model with confounding variables was constructed. Then, an

independent variable, having a third place, was added to the model to see what it does to the overall model fit and to other variables, as well as its own significance as a predictor of social connectedness (Hypothesis 1)

- In order to test the research hypothesis 2, "Among those who have a third place, the more third places older adults have, the more they are socially connected," people who did not have a third place were excluded in the analysis. To the base model, the independent variable, i.e. the number of third places, was added and checked its own significance as a predictor of social connectedness among older adults having a third place.
- Testing the research hypothesis 3, "Among those who have a third place, the more often older adults visit third places, the more they are socially connected" was conducted in a same manner as hypothesis 2-testing.

CHAPTER IV

RESULTS

4.1. Characteristics of Respondents

4.1.1. Socio-demographic and Economic Characteristics

The subjects of this study were older adults living in their own single-family homes in College Station and Bryan. 46% of participants reside in College Station and 54 % of them in Bryan. The mean age of participants was 77 years old. 49% of participants were in the range of age 65~74. The number of female participants was slightly larger than that of male participants. Participants were predominantly white. The married accounted for 74%, widowed 19%, divorced 5%, and others 1.2%. 45% of participants were college graduates; about one third of total participants (33.55%) had a higher degree in graduate school or more. This shows that the sample is characterized by highly educated residents. A majority of older adults (82.45%) live with someone or partners. The 17.6% of participants live alone. Participants were mostly retired (89%), but some were currently employed or self-employed (11%). 34% of participants attend church weekly. Participants' home property appraised value ranges from $62,890 to $760,250 with a mean value of $185,292.

Table 7 Characteristics of Participants

Characteristics	N
City	305
College Station	140 (45.90%)
Bryan	165 (54.10%)
Age	298
65~74	147 (49.33%)
75~84	114 (38.25%)
85+	37 (12.42%)
Gender	303
Female	162 (53.47%)
Male	141 (46.53%)
Race	303
White	275 (90.76%)
Non-white	28 (9.24%)
Married	305
Now married	227 (74.43%)
Widowed	58 (19.02%)
Divorced	16 (5.25%)
Separated	1 (0.33%)
Never married	3 (0.98%)
Education	304
0 year to high school graduate	64 (21.05%)
College graduate	138 (45.39%)
Graduate school or more	102 (33.55%)
Living alone	302
Living with someone	249 (82.45%)
Living alone	53 (17.55%)
Employment	305
Not working	271 (88.85%)
Currently working	34 (11.15%)
Weekly church attendance	293
Attending church	100 (34.13%)
Not attending church	193 (65.87%)
Property appraised value ($) of participants' residence	
Mean property value	185,292 [Min $62,890, max $760,250]

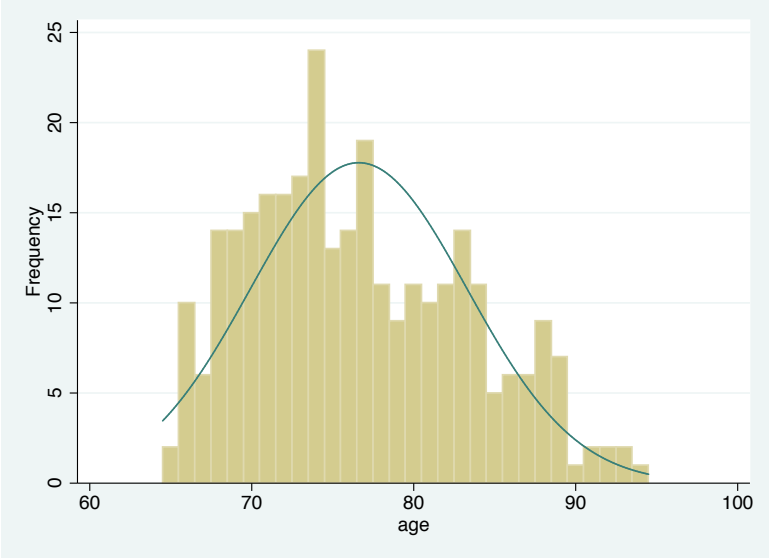

Figure 3 The Age Distribution of Participants

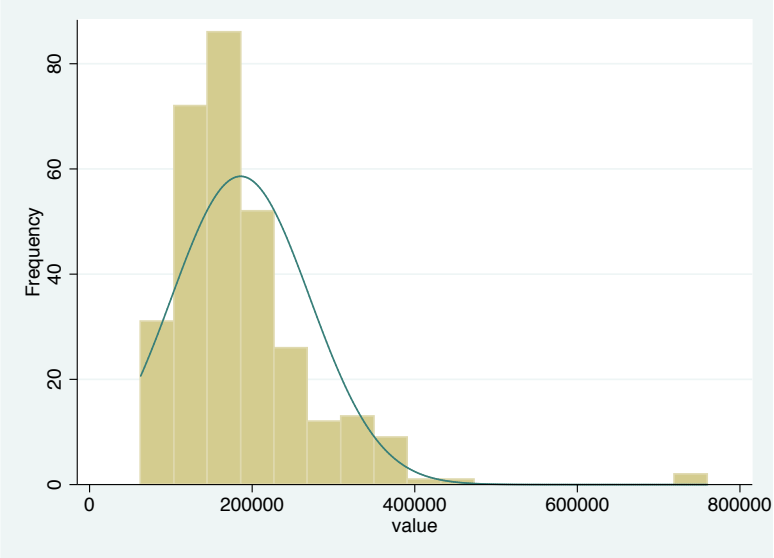

Figure 4 Property Appraised Value of Participants' Current Residence

4.1.2. Perceived Social Connectedness

The scale of social connectedness ranges from very socially isolated (score=0) to very socially connected (score=24). According to the recommendation by Hawthorne (2006), the Friendship Scale scores can be categorized into 5 levels of perceived social isolation and interpreted as follows: very socially isolated (score range 0-11), isolated (score range 12-15), some social support (score range 16-18), socially connected (score range 19-21), and very socially connected (score range 22–24). The mean score of participants was 21. This indicates that older adults living in their own single-family homes in College Station and Bryan are socially connected on average.

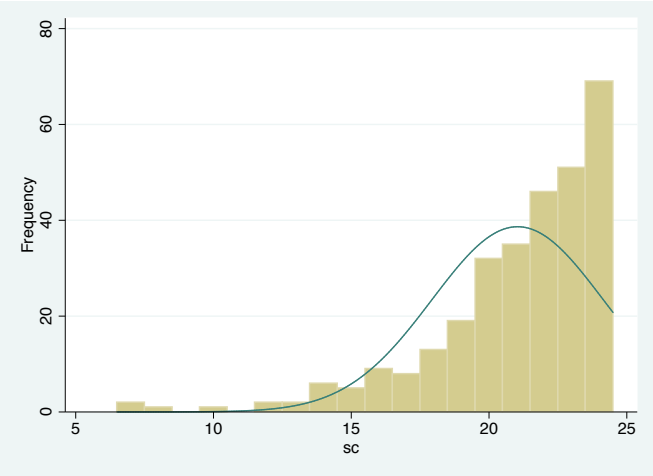

Figure 5 Perceived Social Connectedness of Participants

Table 8 Perceived Social Connectedness of Participants

	N	Mean	SD	Min	Max
Social connectedness (score range: 0-24)	301	21.04	3.11	7	24
0-11: very socially isolated	4 (1.33%)				
12-15: isolated or low-level social support	15(4.98%)				
16-18: some social support	33(10.96%)				
19-21: socially connected	84(27.91%)				
22-24: very socially connected	165(54.82%)				

4.1.3. Self-Efficacy and Self-rated General Health

For a comparison purpose of the General-Self Efficacy scale, Schwarzer (1993) conducted a research with data from 1,660 German adults ranging in age from students to older adults. The mean score for this whole sample was 29.28 (SE=4.6). In comparison to the score, the result of this study shows that participants have high level of self-efficacy. In Figure 8, higher score indicates higher self-efficacy. On the other hand, the score measured by Self-rated Health Scale shows that the participants' average health condition is between good and very good.

Table 9 General Self-Efficacy & Self-Rated General Health

	N	Mean	SD	Min	Max
Self-efficacy	296	34.47	4.13	15	40
Health	303	3.58	0.95	1	5
Excellent (=5)	52 (17.16%)				
Very good (=4)	116 (38.28%)				
Good (=3)	97 (32.01%)				
Fair (=2)	33 (10.89%)				
Poor (=1)	5 (1.65%)				

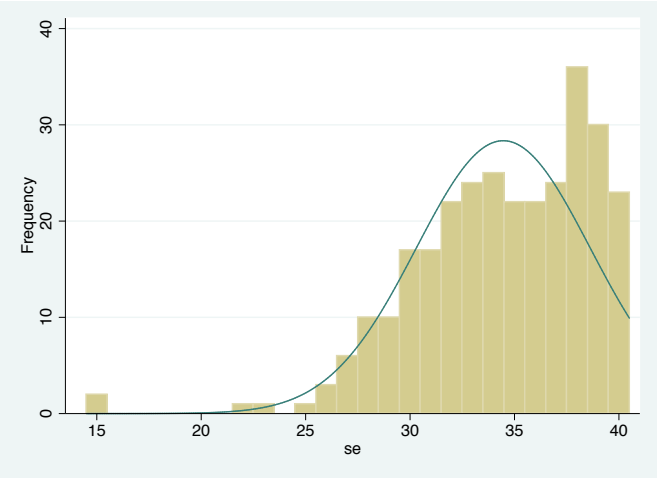

Figure 6 Self-efficacy of Participants

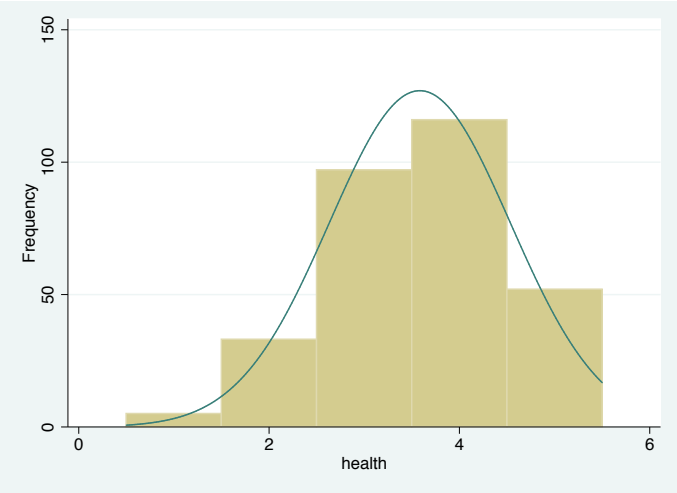

Figure 7 Self-rated General Health of Participants

4.1.4. Life-Space Mobility

Life-space mobility measured participants' daily spatial boundary, frequency, and independence. The spatial boundary measure of mobility shows that the 17% of participants have never been to places within a neighborhood in the past four weeks. This implies that this study area lack places for older adults to go within a neighborhood. The independence measure of mobility at a neighborhood level shows that people with complete independence accounts for 91%, those who needs equipment only 5%, and those who need personal assistance 4%.

The composite score of life-space mobility was calculated, considering life-space, independence, and trip-frequency (Peel, Claire, et al., 2005). The composite score shows that participants are generally physically active (Figure 10).

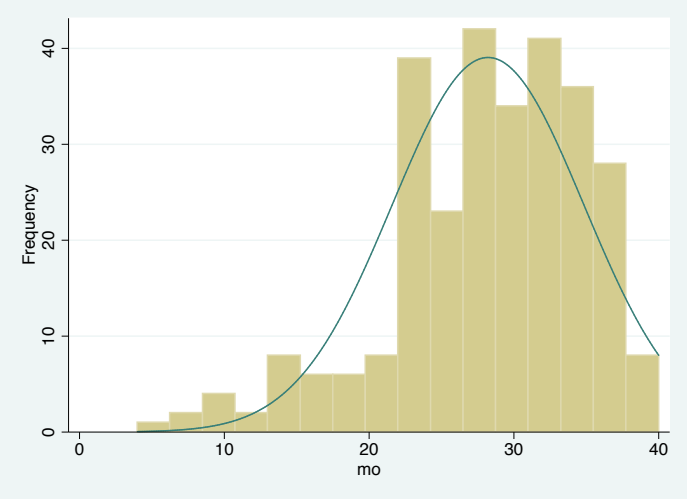

Figure 8 Life-Space Mobility of Participants (Composite Score)

Table 10 Life-Space Mobility of Participants

Life-Space			
	Neighborhood	Town	Beyond town
Never been to places within	49 (16.55%)	5 (1.68%)	66 (22.00%)
Been to places within	247 (83.45%)	293 (98.32%)	234 (78.00%)
	296	298	300
Independence			
	Neighborhood	Town	Beyond town
Personal assistance	11 (3.91%)	13 (4.42%)	13 (4.76%)
Equipment only	14 (4.98%)	20 (6.80%)	17 (6.23%)
No help needed	256 (91.10%)	261 (88.78%)	243 (89.01%)
	281	294	273
Trip Frequency			
	Neighborhood	Town	Beyond town
Less than 1 time/week	37 (13.75%)	13 (4.44%)	164 (61.19%)
1-3 times/week	70 (26.02%)	67 (22.87%)	80 (29.85%)
4-6 times/week	55 (20.45%)	120 (40.96%)	16 (5.97%)
Daily	107 (39.78%)	93 (31.74%)	8 (2.99%)
	269	293	268

4.1.5. Access to Amenities and Neighborhood Safety from Crime

The measure of access to amenities shows that participants perceive that their neighborhoods are not very accessible to amenities by walking. In Figure 11, a higher score means higher accessibility. Score ranges from 1 to 4. On the other hand, older adults' perceived neighborhood safety from crime tells us that they perceive that their neighborhoods are quite safe from crime. In Figure 12, higher score means higher safety. Score ranges from 1 to 4.

Table 11 Perceived Neighborhood Environment

	N	Mean	SD	Min	Max
Access to amenities	294	2.03	0.92	1	4
Neighborhood safety from crime	304	3.63	0.57	1	4

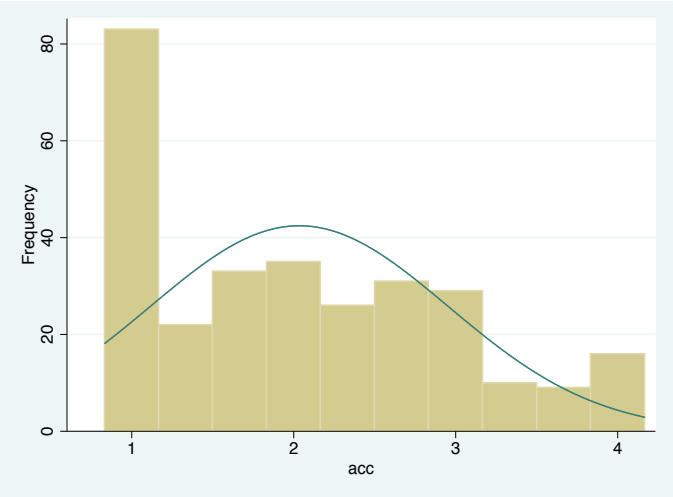

Figure 9 Perceived Access to Amenities

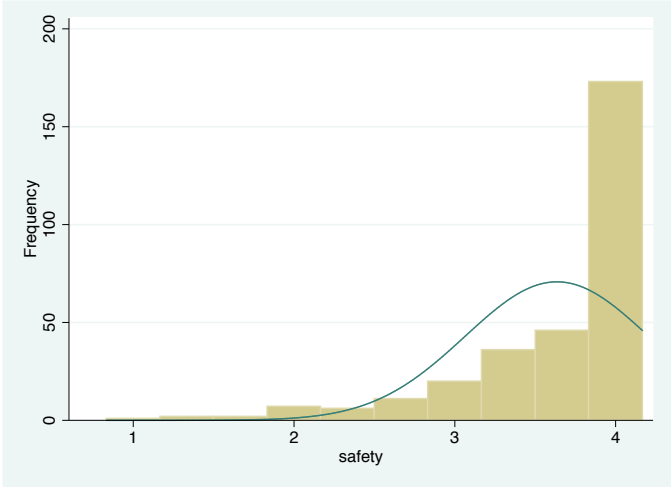

Figure 10 Perceived Neighborhood Safety from Crime

4.1.5. The Use of Third Places

The number of people who have a third place was 163. That accounts for 45% of participants, and more than half (55%) of older adults did not have any third place. The number of third places ranges from 0 to 10. The average number of third places an individual has was one place. The trip frequency to their third places was 2.27 times per week in total.

Table 12 The Use of Third Places

	N	Mean	SD	Min	Max
Having a third place	296				
Yes	163 (44.93%)				
No	133 (55.07%)				
The number of third places	296	1.31	1.55	0	10
Total trip frequency to third places	296	2.27	2.9	0	18

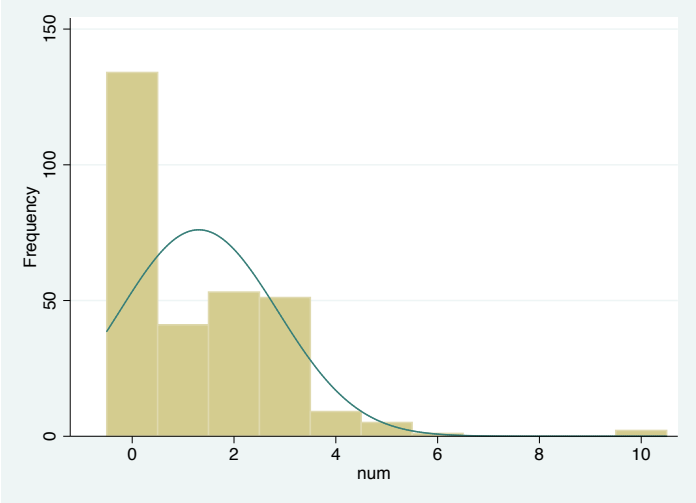

Figure 11 The Number of Third Places Used by Individual Participants

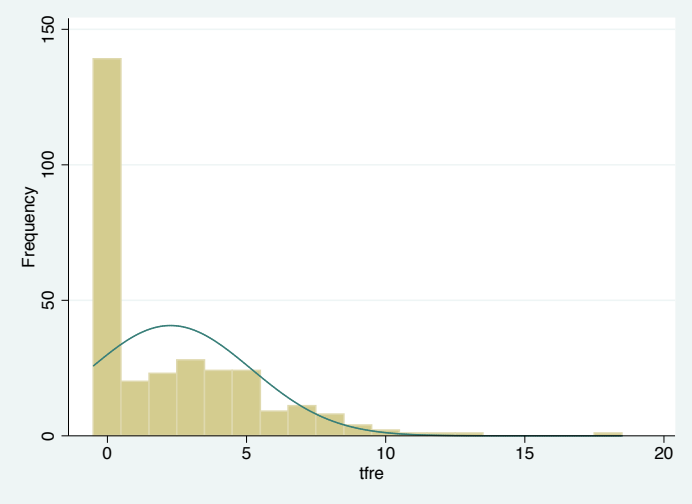

Figure 12 Total Weekly Trip Frequency to Third Places

4.2. Older Adults' Frequently Visited Places for Socializing

The number of participants who have a third place was 163, and 133 people did not have a third place out of 305 total participants with 9 missing. Participants were asked to write the name of third places and activities that they were involved in their third places. After collecting the survey questionnaire, the specific places were categorized into the 15 functional types based on the Land-Based Classification System (as shown in Table12). In order to examine what third places are most used by older adults, each functional type of place was ranked by a total number of users. As additional indicators of third place usage, this study also used "a sum of visits by all participants" and "average weekly visit by individual." The total visit frequency to each functional type was calculated by aggregating each individual's visit frequency to the

specific places. As shown in Table 13 and Table 14, the types of older adults' third places and place qualities were based on the 163 participants with a third place.

The most frequently visited third places were religious institutions such as churches. The 35.8% of total participants with a third place use churches as their third places. The average visit frequency of church was 1.9 times per week. Food service was ranked second, which included restaurants, cafes, fast-food restaurants, coffee shops, and bakeries. 19.4 % of participants use restaurants and cafes as their third place. Participants' average visit frequency of food service cafes was 1.9 times per week. Amusement, sports, or recreation establishments were ranked third. This functional type includes gyms, workout places, rehab exercise centers run by hospitals, and golf clubs. The average visit frequency was 2.7 times per week among respondents. Compared to other third places, the weekly visit frequency to this type of place was quite high. Family, friends, or neighbors' homes were ranked in fourth place, accounting for 7.6% of participants. Respondents use these places for socializing 2.6 times per week. Retail sales or services were ranked fifth, accounting for 13% of participants. This type of place includes shopping malls, grocery stores, bookstores, and hair salons. The weekly visit frequency was the highest among all types of places. The average visit frequency was 3 times per week. Educational services such as community centers or senior centers were also ranked in the fifth place. The weekly visit frequency was 1.5 times on average. Social clubs and study groups were followed in rank.

Table 13 The Classification of Older Adults' Third Places by Land-Based Classification Standards

LBCS	Function	Places	Activities
1100	Private household	Family, Friends, & Neighbor's home	Conversation, Games, Eating, Interacting with grandchildren, Bridge, Movie, Sports, Events, TV, Landscaping, Playing cards
1200	Housing services for the elderly	Retirement community	Volunteer work, Welcoming new residents
1300	Hotels, motels, or other accommodation services	Hotel	Conversation
2100	Retail sales or service	Shopping center, Mall, Grocery store, Market, Bookstore, Hair salon	Conversation, Shopping, Eating, Coffee, Book discussion
2200	Finance and insurance	Bank	Meeting
2500	Food services	Restaurant, Café, Fast-food restaurant	Conversation, Eating, Games, Coffee, Watching TV/Video
5100	Performing arts or supporting establishment	Cinema	Watch movie
5200	Museum and other special purpose recreational institutions	Museum	Conversation, Volunteer work
5300	Amusement, sports, or recreation establishment	Exercise, Gym, Rehab Center, Bowling, Country club, golf course, pool, Health club, Fitness center, Yoga studio	Exercise, Conversation, Walking, Weight lifting, Running, Watching Sports, Game, Swimming, Bowling, Bridge, Eating
5400	Natural and other recreational parks	Park, Dog park	Walk, Conversation
6100	Educational services	Community center, Senior center	Quilting, Knitting, Listening to a special speaker, Theater, Music, Sports, Public meetings, Reading, Conversation, Browsing books, Games, Meals, Lunch, Line dancing, Dominos, Food
6500	Health and human services	Hospital, Health center, Medical center	Work, volunteer, patient interaction, office work
6600	Religious institution	Church	Worship, Volunteer, Sunday school, Prayer, Bible study, Choir, Conversation, Eating, Cooking, Game, Quilting, Singing,
6800	Associations, nonprofit organizations, etc.	Legion/Lions Club/Rotary	Conversation, food, activities, social work, regular meeting community service
9500	Fishing, hunting and trapping, game preserves	Fishing	
9900	Unclassifiable Function	Study group, Social group	Bridges, Lunch, Geneology study, Bible study, Discussion, Political activities, Fellowship, Conversation, Reading

Table 14 Ranked Older Adults' Third Places by Total Visit Frequency

Rank	Function	Place	N	Average weekly visit by individual	Sum of visits by all participants	Travel time (min)
1	Religious institution	Church	103	1.9	195	13
2	Food services	Restaurant & Café	56	1.8	99	13
3	Amusement, sports, or recreation establishment	Exercise	47	2.6	122	10
4	Private household	Family & friends & neighbor's home	22	2.6	58	11
5	Retail sales or service	Shopping mall/ grocery store/bookstore/ hairdresser	16	3.0	48	11
5	Educational services	Community & Senior center	16	1.5	25	15
7	Associations, nonprofit organizations, etc.	Legion/Lions Club/Rotary	8	1.4	11	12
8	Unclassifiable Function	Study group, Social group	8	1.3	10	13
8	Performing arts or supporting establishment	Cinema	5	1.2	6	9
10	Health and human services	Hospital	4	2.0	8	10
11	Natural and other recreational parks	Park	2	2.0	4	
12	Housing services for the elderly	Retirement community	1	1.0	1	2
12	Hotels, motels, or other accommodation services	Hotel	1	1.0	1	
12	Finance and insurance	Bank	1	1.0	1	20
12	Museum and other special purpose recreational institutions	Museum	1	2.0	2	5
12	Fishing, hunting and trapping, game preserves	Fishing	1	2.0	2	30

Table 15 Place Qualities Contributing to Older Adults' Visit

Rank	Function	Place	N	Friendly People	Food & Drinks	Cost	Seating	Atmosphere	Location	Activities
1	Religious institution	Church	103	4	2	1	2	4	3	3
2	Food services	Restaurant & Café	56	4	3	2	2	3	2	2
3	Amusement, sports, or recreation establishment	Exercise & Place	47	4	1	3	1	3	3	4
4	Private household	Family, friends, & neighbor's home	22	4	3	1	2	3	2	3
5	Retail sales or service	Shopping mall, grocery store, market, bookstore, & hair salon	16	4	2	2	2	3	3	1
5	Educational services	Community & Senior center	16	4	2	2	3	4	3	4
7	Associations, nonprofit organizations, etc.	Legion, Lions Club, & Rotary	8	4	3	2	3	4	2	3
8	Unclassifiable Function	Study & Social group	8	4	2	1	2	3	3	4
8	Performing arts or supporting establishment	Cinema	5	3	2	3	3	2	3	4
10	Health and human services	Hospital	4	4	0	0	0	3	3	3

* Participants were asked to write a number (Great deal=4, Much=3, Somewhat=2, Little=1, and Never=0) by each item that indicates how much it contributes to his/her visit to the place.

4.3 Place Qualities Contributing to Older Adults' Visit to Third Places

This study found place-related factors that affect older adults' visits to third places. Although there existed some variations in the degree of importance of each factor by the types of third places, several commonly important factors were found. The most important factors were friendly people, activities, atmosphere, and location (Table 14).

'Friendly people' were considered as the most critical contributor to older adults' visits. The magnitude of importance was 'great deal' (score=4). Friendly people were the most significant deciding factor for older adults' visits in all places. 'Activities' were the next significant factor for older adults visit. In most of third places, the contribution of activities was considered 'much' (score=3). 'Atmosphere' had a similar significance as activities in most places (score=3). 'Location' was considered as 'somewhat important'.

4.4. Regression Analysis: The Impact of Third Places on Perceived Social Connectedness

In the following section, the impact of third places on older adults' perceived social connectedness was examined. In order to conduct a regression analysis, several prior analyses were conducted such as reliability of scales, correlation analysis, and checking for assumptions of OLS.

4.4.1. Reliability of Scales

In this study, all data except for property value data were collected through surveys. Thus, the survey scales to measure each variable should be reliable for further analysis. In order to check the reliability of scales, internal consistency reliability and test-retest reliability were examined.

First, let's look at the internal consistency of scale. Each scale for self-efficacy, access to amenities, neighborhood safety from crime, and perceived social connectedness that were used in this study were proven to have a good reliability in the previous studies. With the specific setting and subjects of this study, i.e. older adults living in their single family homes of Bryan and College Station in Texas, the level of internal consistency was similar to those in the previous findings, and all the scales had a good reliability: self-efficacy (10 items, Cronbach's alpha=0.88), access to amenities (3 items, Cronbach's alpha=0.8096), neighborhood safety (3 items, Cronbach's alpha=0.8051), and social connectedness (6 items, Cronbach's alpha=0.7278). No items in any of these scales would have increased alpha significantly if they were deleted.

In order to check test-retest reliability, the Pearson Correlation Coefficient and Intra-class Correlation Coefficient (ICC) were used. While Pearson correlation coefficients tend to overestimate the true correlation for small sample sizes (less than 15), the intra-class correlation coefficient (ICC) does not have this bias with small samples. Thus, this study used the Intra-class Correlation Coefficients (ICC) for ordinal and 5-point Likert-type items. For computing ICCS, a 2-way mixed model with absolute agreement and average measurement was employed in SPSS. ICC values usually range

between 0-1, with higher values representing higher and stronger agreements. Values from ICC can be interpreted differently depending on the purpose of the assessment, but generally, an ICC value greater than 0.75 is generally considered good, 0.60-0.75 moderate, and less than 0.60 indicate poor reliability (Portney & Watkins, 2000). When ICC has low/no variance, ICC can approach 1 or sometimes low scores (Brownson, Ross, et al. 2004).

As seen in Table 17, participants' response to the number of third places, access to amenities, mobility, and health status had a good consistency over two months. However, the perceived social connectedness, self-efficacy, and perceived neighborhood safety had a poor to moderate consistency level. Caution should be used in interpreting the relatively low consistency of the variables because of the time gap and the nature of the variables. In conducting a test-retest, two-month time gap can be considered quite long, given that a majority of other studies retest within 2 weeks after the first test. As a time gap increases, the consistency tends to decrease. Perceived social connectedness can be influenced by having a new relationship with a friend or the loss of a partner or friend. Also, perceived neighborhood safety can be easily influenced by the recent occurrence of crime in the neighborhood.

Table 16 Intra-class Correlation Coefficient (ICC)

	Intra-class Correlation Coefficient (ICC)
Perceived social connectedness	0.743
Self-efficacy	0.706
Number of third places	0.896
Trip frequency to third places	0.914
Access to amenities	0.935
Perceived neighborhood safety	0.342
Mobility	0.895
Health	0.893

4.4.2. Correlation Analysis

To examine the relationship among independent variables, a correlation analysis was conducted using the Pearson's correlation coefficient and pairwise deletion at 95% confidence interval (Table 16).

Life-space mobility had a strong positive relationship with health [$r = 0.4185$, $n = 286$, $p < 0.0001$], a weak positive relationship with self-efficacy [$r = 0.2981$, $n = 281$, $p < 0.0001$], and a weak negative relationship with age ($r = -0.2468$, $n = 281$, $p < 0.0001$]. Life-space mobility had no relationship with perceived neighborhood safety from crime [$r = 0.1822$, $n = 286$, $p = 0.002$], the number of third places [$r = 0.1859$, $n = 280$, $p = 0.0018$], and trip frequency [$r = 0.1826$, $n = 280$, $p = 0.0022$].

Health condition had a weak positive relationship with self-efficacy [$r = 0.2394$, $n = 294$, $p < 0.0001$]. Health had little relationship with age [$r = -0.1974$, $n = 296$, $p < 0.0001$], perceived neighborhood safety [$r = 0.1747$, $n = 302$, $p = 0.0023$], the number of

third places [r = 0.1660, n = 294, p = 0.0043], and total trip frequency to third places [r = 0.1519, n = 294, p = 0.0091].

Self-efficacy had a negligible relationship with age [r = -0.1759, n = 289, p = 0.0027] and perceived neighborhood safety [r = 0.1360, n= 295, p = 0.0195].

Three variables measuring the use of third places are strongly positively correlated. To be more specific, having a third place is strongly correlated with the number of third places [r = 0.7620, n = 296, p < 0.0001]. Having a third place is also strongly positively correlated with the total trip frequency to third places [r = 0.7069, n = 296, p < 0.0001]. The number of third places and the trip frequency had a strong correlation [r = 0.7297, n = 296, p < 0.0001]

Table 17 Correlation among Variables

	Age	Currently Married	Living alone	Female	Life-Event	Property Value	Self-efficacy	Health	Mobility	Access	Safety	Having a place	Number of places	Trip-Freq.
Age	1													
Currently Married	-0.2718*	1												
Living alone	0.2003*	-0.7220*	1											
Female	0.0421	-0.2254*	0.2018*	1										
Life-event	0.0456	-0.0859	0.0221	0.0492	1									
Property value	-0.0391	0.1860*	-0.1469*	-0.1235*	-0.0719	1								
Self-efficacy	-0.1759*	0.017	-0.019	-0.1523*	-0.0481	0.1448*	1							
Health	-0.1974*	0.1833*	-0.2027*	0.0268	-0.0979	0.1599*	0.2394*	1						
Mobility	-0.2468*	0.2100*	-0.2048*	-0.0643	0.0144	0.2188*	0.2981*	0.4185*	1					
Access	-0.0688	0.0276	0.0338	-0.0484	0.0624	-0.1525*	-0.0426	0.0968	0.0241	1				
Safety	0.0132	0.0245	-0.0434	-0.1003	-0.0815	0.2343*	0.1360*	0.1747*	0.1822*	-0.0662	1			
Having a place	-0.0369	0.0431	-0.0366	0.0153	0.1366*	0.0674	-0.0384	0.1520*	0.1586*	0.1595*	-0.01	1		
Number of places	0.0042	0.044	-0.0077	-0.0082	0.1302*	0.1163*	0.0609	0.1660*	0.1859*	0.1154	0.0566	0.7620*	1	
Trip Freq.	-0.0462	0.0586	-0.0421	-0.0003	0.1287*	0.0491	0.0024	0.1519*	0.1826*	0.0965	0.0269	0.7069*	0.7297*	1

4.4.3 Checking for Assumptions of OLS

Perceived social connectedness was non-normally distributed, with a skewness of -1.65 ($p < 0.001$) and a kurtosis of 6.46 ($p < 0.001$) (Table 18 and Table 19). In all three tests (Table 19), the null hypothesis that the sample came from a normally distributed population was rejected ($p < 0.001$). Thus, it is concluded that the distribution of standard errors of the dependent variable may not be normal.

Table 18 Summary of Perceived Social Connectedness

sc

	Percentiles	Smallest		
1%	10	7		
5%	15	7		
10%	17	8	Obs	301
25%	20	10	Sum of Wgt.	301
50%	22		Mean	21.03654
		Largest	Std. Dev.	3.106229
75%	23	24		
90%	24	24	Variance	9.64866
95%	24	24	Skewness	-1.649711
99%	24	24	Kurtosis	6.462393

Table 19 Test for Normality

```
. sktest sc

                    Skewness/Kurtosis tests for Normality
                                                              ------- joint ------
    Variable |   Obs   Pr(Skewness)   Pr(Kurtosis)  adj chi2(2)
-------------+-------------------------------------------------------------------
          sc |   301      0.0000          0.0000            .

. swilk sc

                    Shapiro-Wilk W test for normal data

    Variable |   Obs        W           V          z       Prob>z
-------------+-------------------------------------------------------------------
          sc |   301     0.85493     30.997     8.062     0.00000

. sfrancia sc

                    Shapiro-Francia W' test for normal data

    Variable |   Obs        W'          V'         z       Prob>z
-------------+-------------------------------------------------------------------
          sc |   301     0.90216     22.373     6.409     0.00001
```

Data transformation is another way to deal with non-normality. A variety of possible transformation functions were examined, but none of the transformation functions could make the distribution normal (Table 20).

Table 20 Data Transformation

Transformation	formula	chi2(2)	P(chi2)
cubic	sc^3	18.24	0.000
square	sc^2	36.13	0.000
identity	sc	.	0.000
square root	sqrt(sc)	.	0.000
log	log(sc)	.	0.000
1/(square root)	1/sqrt(sc)	.	0.000
inverse	1/sc	.	0.000
1/square	1/(sc^2)	.	0.000
1/cubic	1/(sc^3)	.	0.000

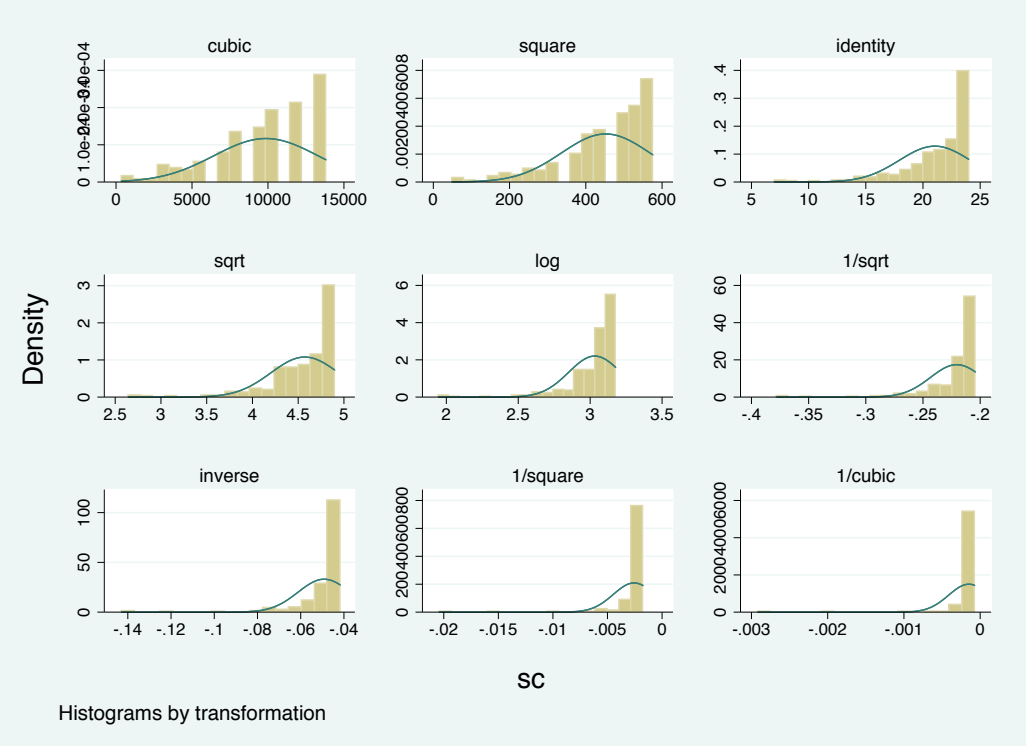

Figure 13 Histograms by Data Transformation

Another OLS assumption to be checked is that error variance is constant. In order to check heteroskedasticity of error variance, a distributional graph of residuals was drawn, and Breusch-Pagan/Cook-Weisberg test (Breusch & Pagan, 1979; Cook & Weisberg,1982) was tested. The result as seen in Table 21 shows that variance was not constant, i.e. heteroskedastic [$p < 0.0001$].

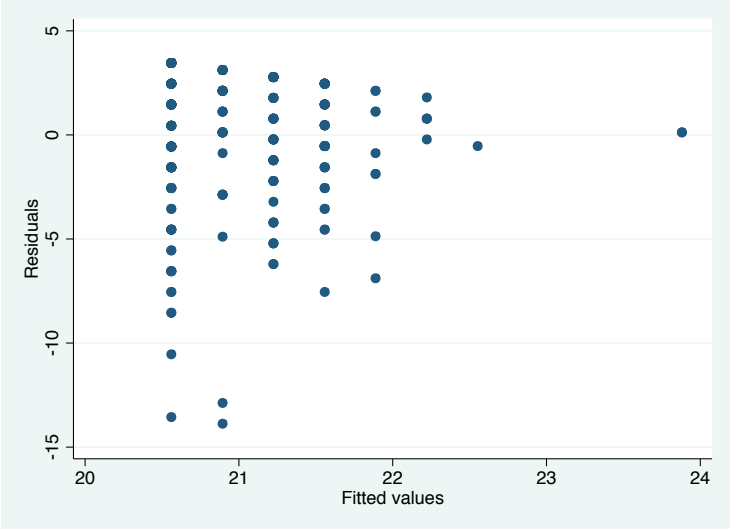

Figure 14 Distribution of Residuals of Perceived Social Connectedness

Table 21 Test for Heteroscadasticity

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of sc

         chi2(1)      =    32.74
         Prob > chi2  =   0.0000
```

4.4.4. Regression with Robust Standard Errors

Regression with robust standard errors was conducted to test three following hypotheses: (1) "Older adults who have a third place are more socially connected than those without a third place," (2) "Among those who have a third place, the more third places older adults have, the more they are socially connected," and (3) "Among those who have a third place, the more often older adults visit third places, the more they are socially connected."

In order to test the impact of place-related factors on social connectedness, this study first constructed a base-model with only control variables such as socio-demographic variables, self-efficacy, health, and neighborhood environment. According to the base model (Table 22), the significant variables that affect social connectedness at 95% significance level were the following three variables: female, self-efficacy, and health. The base model with control variables explained 26% of variance in older adults' perceived social connectedness.

Table 22 Results of Regression Analysis 1: The Base Model with Control Variables

Baseline model (N=259, R^2 =0.26) Dependent variable: perceived social connectedness						
	B	Robust SE	Beta	p	95% CI	
Age	0.024	0.029	0.0511	0.409	-0.033	0.080
Married	0.535	0.559	0.0758	0.339	-0.566	1.635
Living alone	-0.274	0.690	-0.0343	0.691	-1.633	1.085
Female	0.938	0.352	0.1549	0.008*	0.244	1.632
Significant life-event	0.259	0.515	0.0332	0.616	-0.756	1.273
Property value	0.000	0.000	-0.0282	0.628	0.000	0.000
Self-efficacy	0.270	0.056	0.3695	0.000*	0.161	0.380
Health	0.534	0.220	0.1624	0.016*	0.100	0.968
Mobility	0.039	0.031	0.0824	0.209	-0.022	0.099
Access to amenities	0.297	0.188	0.0888	0.115	-0.072	0.667
Safety from crime	0.752	0.438	0.1356	0.087	-0.110	1.614
(Constant)	2.636	3.663	.	0.472	-4.578	9.850

To test the impact of having a third place on social connectedness (hypothesis 1), the independent variable, "having a third place," was added to the base-model. The result of regression analysis shows that controlling other variables, older adults having a

third place are more socially connected than those without a third place. More specifically, older adults having a third place were 0.957 unit of scale higher in their perceived social connectedness than those without a third place. Having a third place added 3% of variance in perceived social connectedness scores, [R^2 = 0.29, F (12, 240) = 4.71, and p =0.011] to the base model. Although the magnitude of impact was small, the impact of having a third place on social connectedness was statistically significant.

Table 23 Results of Regression Analysis 2: The Impact of Having a Third Place

Independent variable: "having a third place" (N=253, R^2 =0.29) Dependent variable: perceived social connectedness						
	B	Robust SE	Beta	p	95% CI	
Age	0.018	0.029	0.039	0.538	-0.040	0.076
Married	0.568	0.596	0.080	0.342	-0.606	1.742
Living alone	-0.239	0.741	-0.030	0.747	-1.698	1.220
Female	0.904	0.353	0.148	0.011*	0.209	1.599
Significant life-event	0.127	0.528	0.016	0.810	-0.914	1.167
Property value	0.000	0.000	-0.047	0.453	0.000	0.000
Self-efficacy	0.277	0.059	0.376	0.000*	0.162	0.392
Health	0.504	0.226	0.152	0.026*	0.059	0.948
Mobility	0.027	0.032	0.057	0.406	-0.037	0.090
Access to amenities	0.228	0.190	0.068	0.232	-0.146	0.602
Safety from crime	0.887	0.476	0.153	0.064	-0.051	1.825
Having a third place	0.957	0.374	0.156	0.011*	0.219	1.695
(Constant)	2.606	3.862	.	0.481	-4.848	10.254

To test hypothesis 2, the number of third places was added to the base model. Participants who did not have a third place were excluded in this analysis. The results show that the number of third places does not influence social connectedness (Table 24) when other variables were controlled.

Table 24 Results of Regression Analysis 3: The Impact of Number of Third Places

Independent variable: "the number of third places" (N=142, R^2=0.31) Dependent variable: perceived social connectedness						
	B	Robust SE	Beta	p	95% CI	
Age	-0.002	0.040	-0.005	0.956	-0.082	0.078
Married	0.582	0.757	0.092	0.443	-0.916	2.080
Living alone	0.149	0.964	0.020	0.878	-1.758	2.056
Female	1.121	0.419	0.212	0.008*	0.293	1.950
Significant life event	-0.055	0.603	-0.007	0.928	-1.249	1.139
Property value	0.000	0.000	-0.107	0.194	0.000	0.000
Self-efficacy	0.213	0.084	0.336	0.013*	0.046	0.380
Health	0.545	0.267	0.182	0.044*	0.016	1.074
Mobility	0.049	0.051	0.105	0.340	-0.052	0.149
Access to amenities	-0.003	0.210	-0.001	0.989	-0.418	0.412
Safety from crime	1.324	0.545	0.258	0.016*	0.246	2.401
Number of third places	0.005	0.138	0.003	0.972	-0.268	0.277
(Constant)	5.698	6.155	.	0.356	-6.481	17.876

Table 25 Results of Regression Analysis 4: The Impact of Total Trip Frequency

Independent variable: "the impact of total trip frequency (N=142, R^2=0.31) Dependent variable: perceived social connectedness						
	B	Robust SE	Beta	p	95% CI	
Age	-0.002	0.040	-0.005	0.959	-0.081	0.076
Married	0.583	0.749	0.092	0.437	-0.898	2.065
Living alone	0.152	0.942	0.021	0.872	-1.712	2.016
Female	1.122	0.420	0.212	0.008*	0.291	1.952
Significant life event	-0.055	0.607	-0.007	0.928	-1.256	1.146
Property value	0.000	0.000	-0.107	0.203	0.000	0.000
Self-efficacy	0.214	0.082	0.337	0.010*	0.052	0.376
Health	0.546	0.262	0.182	0.039*	0.027	1.064
Mobility	0.049	0.050	0.105	0.330	-0.050	0.147
Access to amenities	-0.002	0.212	-0.001	0.992	-0.421	0.417
Safety from crime	1.324	0.547	0.258	0.017*	0.242	2.407
Total trip frequency	0.002	0.074	0.002	0.979	-0.144	0.148
(Constant)	5.666	6.052	.	0.351	-6.308	17.639

To test hypothesis 3, the frequency of third place was added to the base model. The results indicate that whether people go to a third place more frequently or not does not make any difference in their perceived social connectedness (Table 25).

Another interesting finding is that perceived neighborhood safety from crime was not statically significant to social connectedness in the base model and the regression with an independent variable of having a third place. However, it was significant in other two regression analyses (Table 23 & Table 24). This result implies that perceived neighborhood safety from crime affects social connectedness only among older adults having a third place.

CHAPTER V

DISCUSSION AND CONCLUSION

5.1. Summaries

5.1.1. Types of Third Places

Religious institutions have never been studied as a third place for older adults. This study found that religious institutions such as churches were found to be the most visited third places.

Places for food services such as restaurants and cafés were the second most used place by older adults. This result supports the findings of previous studies (Cheang, 2002: Rosenbaum, Ward, Walker and Ostrom, 2007: Rosenbaum, Sweeney, and Windhorst, 2009: Mehta & Bosson, 2009: Hickman, 2013). In Mehta & Bosson (2009), a majority of the commercial third places that people considered as third places were food-related, such as coffee shops, bars/pubs, restaurants, and ice-cream shops. Hickman (2013) also found that residents considered a shop as a particularly important third place. In addition, Cheang (2002) also found that a fast-food restaurant is frequently used for socializing among older adults on daily basis.

Places for sports and recreation were another popular third place used by older adults. People who have this type of third place visit it about 2.6 times a week, which is a relatively high frequency compared to the average visit frequency of other third places. This study supports a previous study (Mair, 2009) that explored 18 curling clubs across Canada and recognized the importance of exercise places as a third place for older adults'

socializing. This finding implies that providing good-quality exercise facilities for seniors can help older adults to be more socially connected in a community.

Places such as shopping malls and bookstores have been rarely studied as third places for older adults. This study found that places for retail sales or service, such as shopping malls, grocery stores, and bookstores, were other frequently used places for older adults to socialize with people. One distinct finding was that the weekly visit frequency was the highest among all types of third places. Individuals who had this type of third place went to the place 3 times a week on average. This finding implies that locating places of retail service with food-related service in a neighborhood would greatly encourage older adults to socialize with friends and neighbors.

5.1.2. The Qualities of Third Places Contributing to Older Adults' Visit

Depending on the type of third place, variations existed in the qualities of places that affected senior visits. However, some factors were considered consistently important across different places. Beginning with the most important, the qualities of places contributing to their visit were as follows: friendly people, atmosphere, activities, and location.

5.1.3. Older Adults' Travel Behavior to Third Places

In terms of older adults' travel behavior to third places, more than 95% of older adults drive. The number of people who walk to third places was less than 5%. The range of travel time by driving was between 2 and 40 minutes with an average of 15

minutes. According to the result of life-space mobility, they use places beyond a neighborhood but within a town more frequently than places within a neighborhood. This can be due to the lack of places for older adults to go within a neighborhood.

5.1.4. The Impact of Third Places on Perceived Social Connectedness

From the result of this study, the predictors of social connectedness with statistical significance are as follows: female, self-efficacy, health, and having a third place. Gender, self-efficacy, and health were previously known correlates of social connectedness, which were still statistically significant in this study.

Among three research hypotheses, Hypothesis 1 was supported by the statistical result, while the other two hypotheses were rejected. The status of having a third place or not influenced older adults' perceived social connectedness. The number of third places and the visit frequency did not make any difference in perceived social connectedness for those who already had a third place. This result implies that if older adults who do not currently have a third place are provided with a new place to socialize that they can frequently visit, they will be more socially connected. Although previous studies on the impact of third places (Cheang, 2002: Rosenbaum, Ward, Walker and Ostrom, 2007: Mair, 2009: Troy, Glover, Diana, & Parry, 2009: Nichole & Campbell, 2014) recognized the importance of third places for older adults, they did not include non-users of a third place in their analysis. To fill this gap, this study included non-users of third places in the analysis. Therefore, this finding was meaningful in a sense that it eliminated the existing bias in previous studies.

5.1.5. No Impact: Living Alone, Marital Status, and Age

'Living alone' was known as a risk factor for older adults' social isolation (LaVeist, Sellers, Brown, & Nickerson, 1997: Haven, Hall, Sylvestre, & Jivan, 2004: Kobayashi et al., 2009). Also, 'non-married status,' such as single, divorced, or widowed, has been considered as a risk factor for social isolation (Kobayashi et al., 2009). However, they did not influence older adults' social connectedness in this study setting. 'Age' was another known risk factor (Luggen & Rini, 1995: Kobayashi, Cloutier-Fisher, & Roth, 2009). In this study, age was examined in three different ways: (1) age as a continuous variable, (2) age as a binary variable of 65-75 and over 75, and (3) age as a binary variable of 65-80 and over 80. In all cases, social connectedness was not differentiated by age. Recent death of spouse, death of close friends and neighbors (Wenger & Burholt 2004), recent relocation of residence (Kobayashi et al., 2009), and recent change in health condition by injury or disease were considered risk factors for social isolation. However, these significant life events did not affect older adults' perceived social connectedness in this study.

5.2. Discussion and Implications

There have been several empirical studies on the neighborhood environment related to a sense of community and social capital. Their consistent finding was that the most critical factor in promoting a sense of community and building social capital was the density of retail services, rather than the presence of mixed-use itself or the number

of destinations within a walking distance (Lund, 2003; Du Toit et al., 2007; L Wood et al., 2008; Wood et al., 2010).

This study looked into perceived social connectedness at an individual level. The major finding is that having a third place increases older adults' perceived social connectedness. In regards to the types of third places, this study found that places of food-service were the second most used places for older adults to socialize. Places of exercise and retail service were another popular third-places. In addition, location was found as an important deciding factor for older adults' third-place visits.

From these findings, this study suggests that American communities should have densely clustered, walkable places of food service, retail, and exercise within a single-family residential area. A small-scale clustering of such places would be more effective than big-scale commercial retailers with a large parking lot. In addition, if such places have the qualities such as lively atmosphere, friendly staffs, and presence of senior-engaging activities, they will be even more effective in attracting older adult customers.

In American communities, single-family homes are mostly located in a segregated residential area. Thus, it is hard for older adults to get out of the residential zone by walking to go to cafes or shops that are mostly located in commercial areas. All respondents of this study, except for a few, indicated that when they go to third places, they drive. Older adults are concerned about their cessation of driving in the near future. They are also concerned with how they can access places independently. In this respect, the idea of densely clustered retail stores in a residential area will help older adults to be more physically independent and socially connected.

This new service-scape would benefit not only older adults but also everyone living in a community. In such a service-scape, people would rather walk than drive. There would be more social contact and interaction in neighborhoods. Consequently, it would prevent older adults from social isolation and also build a sense of community and social capital in a neighborhood.

Another thing to note is how to reshape existing neighborhood infrastructures that are frequently used by older adults. For example, parks have been considered as the most representative leisure space in American communities. In this study area, parks were located within a walking distance or short driving-distance from participants' residences, i.e. accessibility was good. However, there were very few respondents whose third place was a park. Creating lively atmosphere and developing senior-engaging programs or events would help parks to be more used by older adults. On the contrary, another representative leisure space for seniors, a senior or community center, is a heavily activity-based place running many well-structured senior programs year-round. Nevertheless, only 4.2% of participants were using a senior or community center as a third place. This may be due to the lack of community centers. There were four community centers in study areas. Regardless of the number, several participants explained the reasons why they did not use a senior or community center by saying that they prefer informal, unstructured places as opposed to an overly programmed place.

There have been predispositions on social isolation in relation to age, marital status, and living alone or not. For example, people living alone in later life are more socially isolated than those living with a partner. Married people are more socially

connected than those widowed, divorced, or single. Increasing age correlates with social isolation. However, the findings of this study provide evidence against these assumptions. In the regression analysis, the status of living alone, marital status, and age did not have an impact on older adults' perceived social connectedness. This contradicting result may be attributed to the characteristics of participants' physical and social activeness. Different from people residing in senior assisted or independent living environments, a majority of participants in this study are still physically active and can drive to destinations by themselves. Through correspondence from participants, it was also observed that some people living alone intentionally seek to become socially engaged with friends and neighbors. The result implies that having a good quality third place can offset other negative effects of changes in marital status, age, and living status.

As a health intervention strategy for aging in place, this study recommends that planners and policy makers should consider to allow densely clustered places of food service and retails in a single family residential area. This will potentially help older adults' to maintain physically independence and social interaction with friends and neighbors. The findings in the types of third places, place-qualities that contribute to seniors' visit, travel behavior to third places will also give insights to senior-related service providers in business and practice.

5.3. Study Limitations

The interpretation of results may not be generalized to people living in different environments such as inner-city low-income neighborhoods or compact, pedestrian-friendly neighborhoods. The subjects were older adult homeowners living in their own single-family homes in two car-dependent cities. Participants were predominantly white, middle-class older adults. 79% of these participants have a college degree, and 34% of them have a mater's or doctoral degree.

This study did not control how much support they were receiving from their family members. If older adults have a strong, positive relationship with their family members and receive enough support from them, having a third place would not have much significance on their social connectedness. Analysis with controlling family structure and support from family members could produce more accurate information. Since there was no appropriate measure to quantify family structure and the amount of family support, this study could not control the variable.

In a door-to-door survey, there were three patterned reasons found for older adults to decline participation. First, a majority of older adults who declined participation in the survey said that they were very sick or not in a good emotional condition. Secondly, there were some who recently moved to their current residence and declined to participate, saying that they do not know about their community and have few acquaintances or friends. Finally, some people did not participate because they were very sensitive to personal questions and privacy. In fact, these people are the group of

people who could be less socially connected. The exclusion of these people may induce a bias of subject. However, there was no way to include this group of people in a survey.

5.4. Further Research

The next study will be conducted in the following four dimensions. First, the impact of third places on social connectedness and the pattern of third-place use need to be tested in a different context of living environments in terms of land uses, housing types, and density of older adult residents. This can include low-income neighborhoods, rural towns, multi-family housing residential areas, urban downtowns, and naturally occurring retirement communities (NORC).

Secondly, a future study needs to examine the pattern of third place use, focusing on the disabled or less mobile older adults. Their travel behavior and pattern of third place use may be different from physically active groups.

Third, different ethnic groups have their own norms and culture on socializing and using places. This study needs to be conducted in different culture and societies. In addition, immigrants have been rapidly growing across America. There is lack of studies on what places immigrants use for socializing, and how the places affect their quality of life. Particularly, an older adult group of immigrants have been rarely studied on this topic.

Finally, for an in-depth investigation of older adult's perception and behavior in the pattern of third place use and social interaction, an ethnographic study can be a very effective tool. The ethnographic method will enable to identify motivations to use third

places, and examine how relationships are maintained and developed through third places.

REFERENCE

Allred, S. B., & Ross-Davis, A. (2011). The drop-off and pick-up method: An approach to reduce nonresponse bias in natural resource surveys. Small-Scale Forestry, 10(3), 305-318.

American Planning Association. (1999). *Land-based classification standards*. American Planning Association.

Asteriou, D., & Hall, S. G. (2011). *Applied econometrics* (pp. 319-354). New York: Palgrave Macmillan.

Barnes, L. L., De Leon, C. M., Wilson, R. S., Bienias, J. L., & Evans, D. A. (2004). Social resources and cognitive decline in a population of older African Americans and whites. *Neurology, 63*(12), 2322-2326.

Bassuk, S. S., Glass, T. A., & Berkman, L. F. (1999). Social disengagement and incident cognitive decline in community-dwelling elderly persons. *Annals of Internal Medicine, 131*(3), 165-173.

Baum, F., & Palmer, C. (2002). 'Opportunity structures': Urban landscape, social capital and health promotion in Australia. *Health Promotion International, 17*(4), 351-361.

Berkman, L. F., & Syme, S. L. (1979). Social networks, host resistance, and mortality: A nine-year follow-up study of alameda county residents. *American Journal of Epidemiology, 109*(2), 186-204.

Berkman, L. F. (1995). The role of social relations in health promotion. *Psychosomatic Medicine*, *57*(3), 245-254.

Bookman, A. (2008). Innovative models of aging in place: Transforming our communities for an aging population. *Community, Work & Family, 11*(4), 419-438.

Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica: Journal of the Econometric Society*, 1287-1294.

Brownson, R. C., Hoehner, C. M., Brennan, L. K., Cook, R. A., Elliott, M. B., & McMullen, K. M. (2004). Reliability of 2 instruments for auditing the environment for physical activity. *J Phys Act Health, 1*, 191-208.

Campbell, N. M. (2014). Designing Retirement Community Third Places: Attributes Impacting How Well Social Spaces Are Liked and Used. *Journal of Interior Design*, *39*(4), 1-14.

Carp, F. M. (1986). Neighborhood quality perception and measurement. *Housing an Aging Society: Issues, Alternatives, and Policy,* , 127-140.

Cerin, E., Saelens, B. E., Sallis, J. F., & Frank, L. D. (2006). Neighborhood Environment Walkability Scale: validity and development of a short form. *Medicine and Science in Sports and Exercise*, *38*(9), 1682.

Cheang, M. (2002). Older adults' frequent visits to a fast-food restaurant: Nonobligatory social interaction and the significance of play in a "third place." *Journal of Aging Studies, 16*(3), 303-321.

Cohen-Mansfield, J., & Parpura-Gill, A. (2007). Loneliness in older persons: A theoretical model and empirical findings. *International Psychogeriatrics, 19*(02), 279-294.

Coleman, A. (1985). *Utopia on trial: Vision and reality in planned housing*. Longwood Pr Ltd.

Cook, R. D., & Weisberg, S. (1982). Residuals and influence in regression.*Monographs on Statistics and Applied Probability. New York: Chapman and Hall*.

D'agostino, R. B., Belanger, A., & D'Agostino Jr, R. B. (1990). A suggestion for using powerful and informative tests of normality. *The American Statistician*,*44*(4), 316-321.

Du Toit, L., Cerin, E., Leslie, E., & Owen, N. (2007). Does walking in the neighbourhood enhance local sociability? *Urban Studies, 44*(9), 1677-1695.

Durkheim, E. (1951). Suicide: A study in sociology. Translated by JA Spaulding and G. Simpson.

Ellis, P., & Hickie, I. (2001). What causes mental illness. *Foundations of Clinical Psychiatry*, 43-62.

Ellison, C. G., & George, L. K. (1994). Religious involvement, social ties, and social support in a southeastern community. *Journal for the Scientific Study of Religion*, 46-61.

Engedal, K. (1996). Mortality in the elderly—A 3-year follow-up of an elderly community sample. *International Journal of Geriatric Psychiatry, 11*(5), 467-471.

Dunham, H. W. (1939). *Mental Disorders in Urban Areas: an Ecological Study of Schizophrenia and Other Psychoses.* New York, Hafner.

Federal Interagency Forum on Aging-Related Statistics (2012). *Older Americans 2012: Key indicators of well-being*. Washington, DC: U.S. Government Printing Office.

Festinger, L., Back, K. W., & Schachter, S. (1950). *Social pressures in informal groups: A study of human factors in housing* Stanford University Press.

Fratiglioni, L., Wang, H., Ericsson, K., Maytan, M., & Winblad, B. (2000). Influence of social network on occurrence of dementia: A community-based longitudinal study. *The Lancet, 355*(9212), 1315-1319.

Granovetter, M. (1983). The strength of weak ties: A network theory revisited. *Sociological Theory, 1*(1), 201-233.

Greenbaum, S. D. (1982). Bridging ties at the neighborhood level. *Social Networks, 4*(4), 367-384.

Guest, A. M., & Wierzbicki, S. K. (1999). Social ties at the neighborhood level two decades of GSS evidence. *Urban Affairs Review, 35*(1), 92-111.

Hanibuchi, T., Kondo, K., Nakaya, T., Shirai, K., Hirai, H., & Kawachi, I. (2012). Does walkable mean sociable? Neighborhood determinants of social capital among older adults in japan. *Health & Place, 18*(2), 229-239.

Havens, B., Hall, M., Sylvestre, G., & Jivan, T. (2004). Social isolation and loneliness: Differences between older rural and urban Manitobans. *Canadian Journal on Aging, 23*, 129-140.

Hawthorne, G. (2006). Measuring social isolation in older adults: Development and initial validation of the friendship scale. *Social Indicators Research, 77*(3), 521-548.

Hawthorne, G. (2008). Perceived social isolation in a community sample: its prevalence and correlates with aspects of peoples' lives. *Social psychiatry and psychiatric epidemiology*, *43*(2), 140-150.

Henning, C., & Lieberg, M. (1996). Strong ties or weak ties? Neighbourhood networks in a new perspective. *Scandinavian Housing and Planning Research, 13*(1), 3-26.

Herr, K. A., & Mobily, P. R. (1991). Complexities of pain assessment in the elderly: Clinical considerations. *Journal of Gerontological Nursing.*

Hickman, P. (2012). "Third places" and social interaction in deprived neighbourhoods in Great Britain. *Journal of Housing and the Built Environment*, 1-16.

House, J. S., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science, 241*(4865), 540-545.

House, J. S., Robbins, C., & Metzner, H. L. (1982). The association of social relationships and activities with mortality: Prospective evidence from the Tecumseh community health study. *American Journal of Epidemiology, 116*(1), 123-140.

Howat, P., Boldy, D., & Horner, B. (2004). Promoting the health of older Australians: Program options, priorities and research. *Australian Health Review, 27*(1), 49-55.

Hu, S., Wei, C., Schlais, M. R., & Yeh, J. (2008). The potential of a college town as a retirement community. *Journal of Housing for the Elderly, 22*(1-2), 45-65.

Iwarsson, S. (1996). Functional capacity and physical environmental demand. Exploration of factors influencing everyday activity and health in the elderly population. *Scandinavian Journal of Occupational Therapy, 3*(3), 139-139.

Kawachi, I., Colditz, G. A., Ascherio, A., Rimm, E. B., Giovannucci, E., Stampfer, M. J., & Willett, W. C. (1996). A prospective study of social networks in relation to total mortality and cardiovascular disease in men in the USA. *Journal of Epidemiology and Community Health, 50*(3), 245-251.

Kobayashi, K. M., Cloutier-Fisher, D., & Roth, M. (2009). Making meaningful connections: A profile of social isolation and health among older adults in small town and small city, British Columbia. *Journal of Aging and Health, 21*(2), 374-397.

Krause, N. (1993). Neighborhood deterioration and social isolation in later life. *The International Journal of Aging and Human Development, 36*(1), 9-38.

Kweon, B., Sullivan, W. C., & Wiley, A. R. (1998). Green common spaces and the social integration of inner-city older adults. *Environment and Behavior, 30*(6), 832-858.

LaVeist, T. A., Sellers, R. M., Brown, K. A. E., & Nickerson, K. J. (1997). Extreme social isolation, use of community-based senior support services, and mortality among African American elderly women. *American Journal of Community Psychology, 25*(5), 721-732.

Lawton, M. P., Nahemow, L., & Teaff, J. (1975). Housing characteristics and the well being of elderly tenants in federally assisted housing. *Journal of Gerontology, 30*(5), 601-607.

Lemon, B. W., Bengtson, V. L., & Peterson, J. A. (1972). An exploration of the activity theory of aging: Activity types and life satisfaction among in-movers to a retirement community. *Journal of Gerontology, 27*(4), 511-523.

Lester, D., & Yang, B. (1992). Social and economic correlates of the elderly suicide rate. *Suicide and Life-Threatening Behavior, 22*(1), 36-47.

Leyden, K. M. (2003). Social capital and the built environment: The importance of walkable neighborhoods. *American Journal of Public Health, 93*(9), 1546-1551.

Lochner, K., Kawachi, I., & Kennedy, B. P. (1999). Social capital: A guide to its measurement. *Health & Place, 5*(4), 259-270.

Longino, C. F., Perzynski, A. T., & Stoller, E. P. (2002). Pandora's briefcase: Unpacking the retirement migration decision. *Research on Aging*, *24*(1), 29-49.

Lubow, J. (1999). *Choose a college town for retirement: Retirement discoveries for every budget.* Globe Pequot.

Luggen, A. S., & Rini, A. G. (1995). Assessment of social networks and isolation in community-based elderly men and women. *Geriatric Nursing, 16*, 179–181.

Lund, H. (2002). Pedestrian environments and sense of community. *Journal of Planning Education and Research, 21*(3), 301-312.

Lund, H. (2003). Testing the claims of new urbanism: Local access, pedestrian travel, and neighboring behaviors. *Journal of the American Planning Association, 69*(4), 414-429.

Mair, H. (2009). Club life: Third place and shared leisure in rural Canada. *Leisure Sciences*, *31*(5), 450-465.

Davidson, R., & MacKinnon, J. G. (1993). Estimation and inference in econometrics. *OUP Catalogue*.

McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology, 14*(1), 6-23.

Mehta, V., & Bosson, J. K. (2009). Third places and the social life of streets. *Environment and Behavior*.

Melevin, P. T., Dillman, D. A., Baxter, R., & Lamiman, C. E. (1999). Personal delivery of mail questionnaires for household surveys: A test of four retrieval methods. Journal of Applied Sociology, 16(1), 69-88.

Mooney, J. (2003). *Driving status and out-of-home social activity levels: The case of older male veterans.*

Nicholson Jr, N. R. (2009). Social isolation in older adults: An evolutionary concept analysis. *Journal of Advanced Nursing, 65*(6), 1342-1352.

Oldenburg, R., & Brissett, D. (1982). The third place. *Qualitative Sociology, 5*(4), 265-284.

Oldenburg, R. (1997). Our vanishing third places. *Planning Commissioners Journal, 25*, 8-10.

Oldenburg, R. (1999). *The great good place: Cafes, coffee shops, bookstores, bars, hair salons, and other hangouts at the heart of a community*. New York: Marlowe.

Peel, C., Sawyer Baker, P., Roth, D. L., Brown, C. J., Brodner, E. V., & Allman, R. M. (2005). Assessing mobility in older adults: The UAB study of aging life-space assessment. *Physical Therapy, 85*(10), 1008-1119.

Portney, L., & Watkins, M. (2000). Validity of measurements. *Foundations of Clinical Research: Applications to Practice,* , 93-101.

Putnam, R. D. (1995). Bowling alone: America's declining social capital. *Journal of Democracy, 6*(1), 65-78.

Riley, P. J., & Kiger, G. (2002). Increasing survey response: The drop-off/pick-up technique. *The Rural Sociologist*, *22*(1), 6-9.

Rogers, S. H., Halstead, J. M., Gardner, K. H., & Carlson, C. H. (2011). Examining walkability and social capital as indicators of quality of life at the municipal and neighborhood scales. *Applied Research in Quality of Life, 6*(2), 201-213.

Rosenbaum, M. S. (2006). Exploring the social supportive role of third places in consumers' lives. *Journal of Service Research*, *9*(1), 59-72.

Rosenbaum, M. S., Ward, J., Walker, B. A., & Ostrom, A. L. (2007). A cup of coffee with a dash of love an investigation of commercial social support and third-place attachment. *Journal of Service Research, 10*(1), 43-59.

Rosenbaum, M., Sweeney, J., & Windhorst, C. (2009). The restorative qualities of an activity-based, third place café for seniors: Restoration, social support, and place attachment at mather's-more-than-a-café. *Seniors Housing and Care Journal, 17*(1), 39-54.

Sabin, E. P. (1993). Social relationships and mortality among the elderly. *Journal of Applied Gerontology, 12*(1), 44-60.

Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. *Measures in Health Psychology: A user's Portfolio. Causal and Control Beliefs, 1*, 35-37.

Shapiro, S. S., & Wilk, M. B. (1965). An analysis of variance test for normality (complete samples). Biometrika, 591-611.

Shapiro, S. S., & Francia, R. S. (1972). An approximate analysis of variance test for normality. Journal of the American Statistical Association, 67(337), 215-216.

Skjaeveland, O., & Garling, T. (1997). Effects of interactional space on neighbouring. *Journal of Environmental Psychology, 17*(3), 181-198.

Steele, J., Bourke, L., Luloff, A. E., Liao, P. S., Theodori, G. L., & Krannich, R. S. (2001). The drop-off/pick-up method for household survey research. *Community Development*, *32*(2), 238-250.

Steinbach, U. (1992). Social networks, institutionalization, and mortality among elderly people in the United States. *Journal of Gerontology, 47*(4), S183-S190.

Stover, R. V., & Stone, W. J. (1974). Hand delivery of self-administered questionnaires. *Public Opinion Quarterly*, 284-287.

Thompson, E. E., & Krause, N. (1998). Living alone and neighborhood characteristics as predictors of social support in late life. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 53*(6), S354-S364.

Turner, R. J. (1981). Social support as a contingency in psychological well-being. *Journal of Health and Social Behavior*, 357-367.

Wenger, G. C., & Burholt, V. (2004). Changes in Levels of Social Isolation and Loneliness among Older People in a Rural Area: A Twenty–Year Longitudinal Study. *Canadian Journal on Aging/la revue canadienne du vieillissement*, *23*(02), 115-127.

Wilkerson, A., Carlson, N. E., Yen, I. H., & Michael, Y. L. (2012). Neighborhood physical features and relationships with neighbors: Does positive physical environment increase neighborliness? *Environment and Behavior, 44*(5), 595-615.

Wood, L., Frank, L. D., & Giles-Corti, B. (2010). Sense of community and its relationship with walking and neighborhood design. *Social Science & Medicine, 70*(9), 1381-1390.

Wood, L., & Giles-Corti, B. (2008). Is there a place for social capital in the psychology of health and place? *Journal of Environmental Psychology, 28*(2), 154-163.

Yeh, S. J., & Liu, Y. (2003). Influence of social support on cognitive function in the elderly. *BMC Health Services Research, 3*(1), 9.

APPENDIX

SURVEY QUESTIONNAIRE

TEXAS A&M UNIVERSITY HUMAN SUBJECTS PROTECTION PROGRAM CONSENT FORM

Senior Leisure Place and Friendship Survey

Dear Senior Residents:

I am a doctoral student and researcher in the Department of Landscape Architecture and Urban Planning at Texas A&M University. I am conducting doctoral dissertation research examining how senior residents use places for socialization in Bryan/ College Station. This survey should take about 15-20 minutes to complete. Your decision to participate in this research is voluntary. There are no foreseeable risks for taking part in this study. There is also no direct benefit to you for participating in this study. However, your responses would help urban planners and policy makers in Bryn/College Station better understand senior residents' behavior and enhance seniors' quality of life. Your information and answers in this study are confidential. The records of this study will be kept private. No identifiers linking you to this study will be included in any sort of report that might be published. Thank you for your valued opinions and information.

If you have any questions or concerns about the survey questionnaire and research study, please contact the Protocol Director, Ji Hei Lee at (979) 255-8781 or alifeoflove@neo.tamu.edu. For any questions or concerns regarding your rights as a research subject, data and safety monitoring, or Texas A&M IRB policies/procedures, please contact Texas A&M Institutional Review Board (IRB), at irb@tamu.edu.

IMPORTANT!

The subject of this study is OLDER ADULTS WHO ARE 65 OR OLDER.

If you are not 65 or older, please pass this survey questionnaire to an older adult who live at this residence.

TEXAS A&M UNIVERSITY HUMAN SUBJECTS PROTECTION PROGRAM

CONSENT FORM

STATEMENT OF CONSENT

I agree to be in this study and know that I am not giving up any legal rights by signing this form. The procedures, risks, and benefits have been explained to me, and my questions have been answered. I know that new information about this research study will be provided to me as it becomes available and that the researcher will tell me if I must be removed from the study. I can ask more questions if I want. A copy of this entire consent form will be given to me.

_____	_____
Participant's Signature	Date
_____	_____
Printed Name	Date

INVESTIGATOR'S AFFIDAVIT

Either I have or my agent has carefully explained to the participant the nature of the above project. I hereby certify that to the best of my knowledge the person who signed this consent form was informed of the nature, demands, benefits, and risks involved in his/her participation.

_____	_____
Participant's Signature	Date
_____	_____
Printed Name	Date

SECTION A: Neighborhood Environment

Access to Services
Please check the response that best reflects the "walkability" of your neighborhood. "Walkability" refers to the facilities and services situated within a10-15 minute walking distance.

		Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
1	Stores are within easy walking distance of my home.	☐	☐	☐	☐
2	There are many places to go within easy walking distance of my home.	☐	☐	☐	☐
3	It is easy to walk to a transit stop from my home.	☐	☐	☐	☐

Crime
Please check the response that best characterizes your feelings about your neighborhood.

		Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
1	There is a high crime rate in my neighborhood.	☐	☐	☐	☐
2	The crime rate in my neighborhood makes it unsafe to go on walks during the day.	☐	☐	☐	☐
3	The crime rate in my neighborhood makes it unsafe to go on walks at night.	☐	☐	☐	☐

SECTION B: Places to Socialize

1. Do you have a place to socialize that you visit regularly at least once a week?
☐ Yes ☐ No If no, please skip this section and directly go to Section C.

2. If yes, how many places to socialize do you have? _____

The following questions reference the places that you answered in Question 2 above. If you have more than three places, please select three favorite places that you visit most frequently.

	Place 1	Place 2	Place 3
3. What is the name of the place?			
4. How many times do you go there per week?	_____time(s)	_____time(s)	_____time(s)
5. How do you usually get there? (Example: by driving, walking, biking, or taking a bus)			
6. How long does it take for you to get there from home by your chosen transport mode above?	_____minutes	_____minutes	_____minutes
7. What activities are you involved there? (Example: games, movies, conversation, etc.)			
8. To what extent do the following items contribute to your visit to the place? Please write a number by each item that indicates how much it contributes to the place. 4 = Great deal 3 = Much 2 = Somewhat 1 = Little 0 = Never	___ Friendly people ___ Food/Drinks ___ Cost ___ Seating ___ Atmosphere ___ Restroom ___ Location ___ Activities	___ Friendly people ___ Food/Drinks ___ Cost ___ Seating ___ Atmosphere ___ Restroom ___ Location ___ Activities	___ Friendly people ___ Food/Drinks ___ Cost ___ Seating ___ Atmosphere ___ Restroom ___ Location ___ Activities

SECTION C: Friendship

The following questions are about your relationship with friends and neighbors. Please check the response that best describes you.

During the past four weeks:

		Almost always	Most of the time	About half the time	Occasio nally	Not at all
1	It is easy for me to relate to others	☐	☐	☐	☐	☐
2	I feel isolated from other people.	☐	☐	☐	☐	☐
3	I have someone to share my feelings with.	☐	☐	☐	☐	☐
4	I found it easy to get in touch with others when I needed to.	☐	☐	☐	☐	☐
5	When with other people, I feel separate from them.	☐	☐	☐	☐	☐
6	I feel alone and friendless.	☐	☐	☐	☐	☐

SECTION D: Feelings about yourself

Please check the response that best describes you.

		Mostly true	Moderately true	Hardly true	Not at all true
1	I can always manage to solve difficult problems if I try hard enough.	☐	☐	☐	☐
2	If someone opposes me, I can find the means and ways to get what I want.	☐	☐	☐	☐
3	It is easy for me to stick to my aims and accomplish my goals.	☐	☐	☐	☐
4	I am confident that I could deal efficiently with unexpected events.	☐	☐	☐	☐
5	Thanks to my resourcefulness, I know how to handle unforeseen situations.	☐	☐	☐	☐
6	I can solve most problems if I invest the necessary effort.	☐	☐	☐	☐
7	I can remain calm when facing difficulties because I can rely on my coping abilities.	☐	☐	☐	☐
8	When I am confronted with a problem, I can usually find several solutions.	☐	☐	☐	☐
9	If I am in trouble, I can usually think of a solution.	☐	☐	☐	☐
10	I can usually handle whatever comes my way.	☐	☐	☐	☐

SECTION E: Life Satisfaction

Please indicate your agreement with each item by placing the appropriate number in the line preceding that item. Please be open and honest in your responding.

7 - Strongly agree
6 - Agree
5 - Slightly agree
4 - Neither agree nor disagree
3 - Slightly disagree
2 - Disagree
1 - Strongly disagree

____ In most ways my life is close to my ideal.

____ The conditions of my life are excellent.

____ I am satisfied with my life.

____ So far I have gotten the important things I want in life.

____ If I could live my life over, I would change almost nothing.

SECTION F: Mobility

The following questions refer to your activities just within the past month. Please respond by checking one space for each row and column.

During the past four weeks, have you been to …	How often did you go there?	Did you use aids or equipment? Did you need help from another person?
Other rooms in your home besides the room where you sleep and the bathroom? __Yes ___No	___ Less than 1 time/week ___ 1-3 times/week ___ 4-6 times/week ___ Daily	___ Personal assistance ___ Equipment only ___ No equipment or personal assistance
An area outside your home such as your porch, deck, patio, garage or driveway? __Yes ___No	___ Less than 1 time/week ___ 1-3 times/week ___ 4-6 times/week ___ Daily	___ Personal assistance ___ Equipment only ___ No equipment or personal assistance
Places in your neighborhood, other than your own yard or apartment building? __Yes ___No	___ Less than 1 time/week ___ 1-3 times/week ___ 4-6 times/week ___ Daily	___ Personal assistance ___ Equipment only ___ No equipment or personal assistance
Places outside your neighborhood, but within your town? __Yes ___No	___ Less than 1 time/week ___ 1-3 times/week ___ 4-6 times/week ___ Daily	___ Personal assistance ___ Equipment only ___ No equipment or personal assistance
Places outside your town? __Yes ___No	___ Less than 1 time/week ___ 1-3 times/week ___ 4-6 times/week ___ Daily	___ Personal assistance ___ Equipment only ___ No equipment or personal assistance

SECTION G: Background

1. What is your gender?
☐ Male ☐ Female

2. In what year were you born?

_____

3. What is the highest grade or level of school you have completed?
☐ Never attended school or only kindergarten
☐ Grades 1 through 11
☐ Grade 12 or GED (High school graduate)
☐ College 1 year to 3 years (Some college or technical school)
☐ College 4 years or more (College graduate)
☐ Graduate school or more

4. What is your race?
☐ White
☐ Black or African American
☐ American Indian or Alaska Native
☐ Hispanic, Latino, or Spanish origin
☐ Asian
☐ Other

5. What is your marital status?
☐ Now married
☐ Widowed
☐ Divorced
☐ Separated
☐ Never married

6. In general, would you say your health is:
☐ Excellent
☐ Very good
☐ Good
☐ Fair
☐ Poor

7. In the past three years, which of the following major life events have taken place in your life?
☐ Death of close family member
☐ Death of close friend
☐ Personal injury or illness
☐ Retirement
☐ Change in residence
☐ None

8. Do you live alone?
☐ Yes
☐ No

9. Are you currently..?
☐ Employed for wages
☐ Self-employed
☐ Out of work and looking for work
☐ Out of work but not currently looking for work
☐ A student
☐ A homemaker
☐ Retired
☐ Unable to work

Thank you!